The OIL WEEKLY

A Journal for
Oil and Gas Producers and Field Men

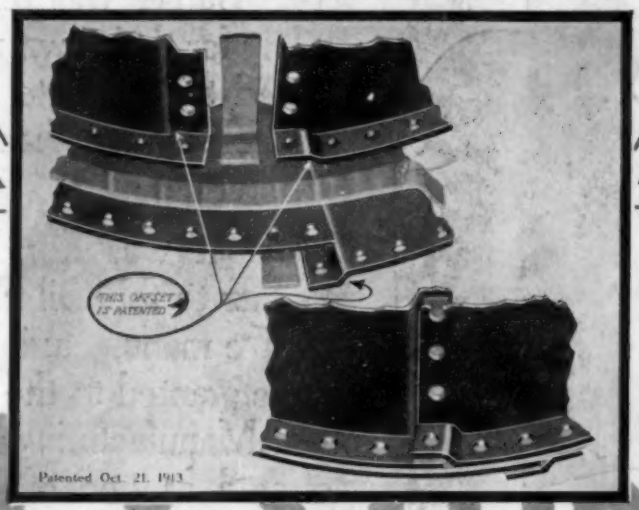
HOUSTON
LOS ANGELES

PITTSBURGH
FT. WORTH

TULSA
CHICAGO

Vol. 31. No. 12 | DECEMBER 15, 1923 | 10 Cents Per Copy

60 Bbls. to 3000 Bbls. Inclusive



Prompt, Dependable Export Service

KEYSTONE

THE MALONEY PATENT
And
KEYSTONE COPPER STEEL

What can you patent on a bolted tank? We show above. We have patents on the OFFSETS—the feature that makes the parts fit together ACCURATELY.

FIT is the primary requisite in a bolted tank. When parts fit gas-tight with only the gasket between it means maximum reinforcement of each part by every other, no calking, minimum labor and time in erecting.

The Maloney patent plus construction of rust-resisting Keystone Copper Steel, place the MALONEY in a class by itself. Ask for Catalog C.

MALONEY TANK MANUFACTURING CO.

Office and Factory—Tulsa, U. S. A.

The Doreco Low Pressure Gas Burner

How and Why it was Perfected

After three years experimental work a large oil company with practically unlimited financial and engineering resources, has perfected the DORECO LOW PRESSURE GAS BURNER.

The Doreco Low Pressure Drilling Boiler Gas Burner

Other large companies co-operated and have subjected the burner to repeated tests in the field under every conceivable condition and have pronounced it superior to any gas burner on the market.

The Burner was originally intended solely for their own use, and was perfected to eliminate the many objectionable features found in the ordinary gas burner.

Later it was decided to offer the Burner to the Oil Fraternity and exclusive manufacturing and sales rights were granted to the Tulsa Rig, Reel and Manufacturing Co., and is now offered as one of their "American Steel Products."

EXCLUSIVE FEATURES

1. Operates on 14 oz. gas pressure.
2. Automatically holds steam at any desired pressure.
3. Automatic air intake control.
4. Operates on about 40% less gas.
5. Burns with "soft flame."
6. Rigidly built for oil field use.
7. Any field or drilling crew can install it.
8. Will last indefinitely.

American Steel Products

In Stock and for Sale by

Tulsa Rig, Reeland Manufacturing Company

ATLAS LIFE BLDG. TULSA, OKLAHOMA

THE OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 1716 Dallas Ave., Houston, Texas. Subscription price $1.00 a year; 10 cents a copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston Texas, under act of March 3, 1879.

Branches of

Continental Supply Co.

GENERAL OFFICE
St. Louis, Mo.

EXPORT OFFICE
2 Rector St., New York

PENNSYLVANIA
Pittsburgh

WEST VIRGINIA
Charleston
Clarksburg

OHIO
Logan Newark
Marietta West Park

ILLINOIS
Bridgeport

KANSAS
Augusta Madison
Chanute Garnett
Coffeyville Peabody
Eldorado Virgil
Eureka Winfield

KENTUCKY
Bowling Green
Louisa

ARKANSAS
Eldorado
Smackover

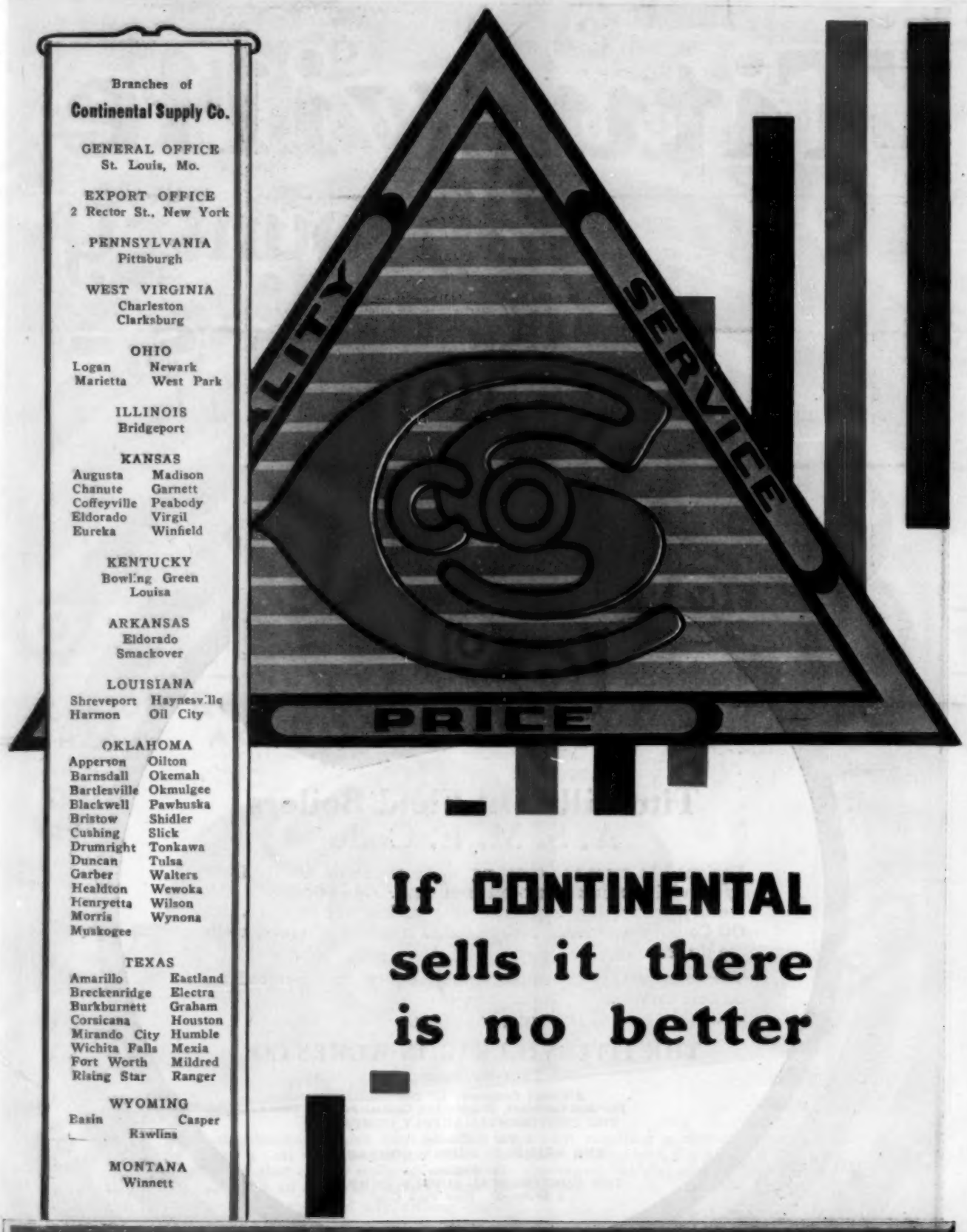
LOUISIANA
Shreveport Haynesville
Harmon Oil City

OKLAHOMA
Apperson Oilton
Barnsdall Okemah
Bartlesville Okmulgee
Blackwell Pawhuska
Bristow Shidler
Cushing Slick
Drumright Tonkawa
Duncan Tulsa
Garber Walters
Healdton Wewoka
Henryetta Wilson
Morris Wynona
Muskogee

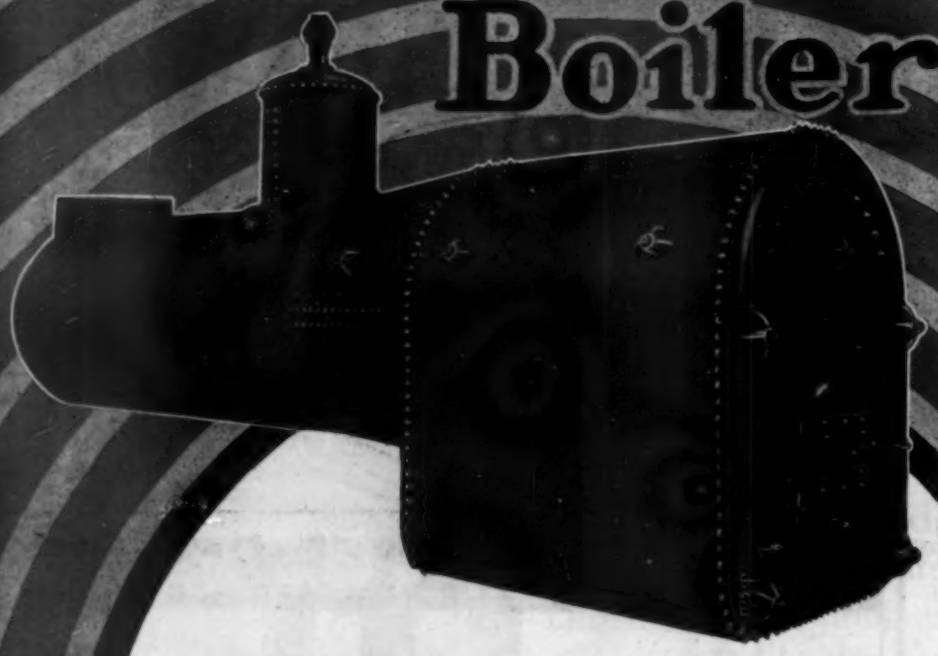
TEXAS
Amarillo Eastland
Breckenridge Electra
Burkburnett Graham
Corsicana Houston
Mirando City Humble
Wichita Falls Mexia
Fort Worth Mildred
Rising Star Ranger

WYOMING
Basin Casper
Rawlins

MONTANA
Winnett



Titusville Oil Country Boilers -



Titusville Oil Field Boilers A. S. M. E. Code

Designed to meet the exacting needs of the oil fields. Built by careful workmen in a modern shop. Maintaining a half century record for excellence that makes "TITUSVILLE" Oil Country equipment recognized as standard wherever wells are drilled.

The strongest, safest, most durable boiler manufactured for oil field service.

Write for bulletin

THE TITUSVILLE IRON WORKS CO.

Titusville, Penna.

Affiliated Companies for Distribution:
For Mid-Continent, Eastern and Coastal Fields:
THE CONTINENTAL SUPPLY COMPANY
For California:
THE REPUBLIC SUPPLY COMPANY
For Export:
THE CONTINENTAL SUPPLY COMPANY,
2 Rector St., New York City

INDEX TO ADVERTISERS

A

Ajax Iron Works ..... Inside Back Cover
American Well & Pros. Co.... *
Axelson Machine Co..... *
Anderson & Anderson..... *
Atchafalaya Oil & Mineral Co.. *

B

Baker Casing Shoe Co.....44
Barnickel, W. S., & Co.....10
Beaumont Well Works Co.....61
Bridgeport Machine Co.....46
Bessemer Gas Engine Co.....59
Boykin Machine & Supply Co.. *
Brownell Company, The..... *
Brown Welding & Machine Co..52
Black, Sivalls & Bryson.....72
Black, C. N. 62
Buckeye Traction Ditcher Co.... *
Butler Manufacturing Co..... *
B. & C. Machine & Foundry Co.61
Braden Company, The..... *
Breckenridge Salvage Co..... *

C

Carter, O. M. 6
Caudill, S. J. 62
Clark Machine Company..... *
Commercial National Bank.....56
Continental Supply Co..... 3
Connoly Agency, D. F. ..... *
Coste, E., & Co.....62
Crain Ready-Cut House Co.... *
Cosden & Co.....55
Colonial Steel Company..... *

D

Darling Valve Mfg. Co..... *
Deep Well Engineering Co..... *
De La Vergne Machine Co.... *
Deussen, Alexander 62
Donoghue, David 62
Dunn Mfg. Co..... *
D. & B. Pump & Supply Co....35

E

Exchange Banks of Tulsa.....14
Ever-Grip Wrench Co..... *

F

Fort Worth Laboratories.....63
Foster & Reiter.....62
Foxboro Company, Inc.....40
Franklin Valveless Engine Co..15
Freeborn Engineering Co.....63
Foamite-Childs Corporation .... *
Frick-Reid Supply Company....30

G

Gantz Tank Company..... *
Guiberson Corporation 43
Ged Iron Works ..... *
Gaso Pump & Burner Mfg. Co..60
Gulf Coast Mach. & Supply Co.. 5
Gulf Refining Company.....64
Gulf Publishing Co.....74-53

H

Hardway & Cathey.....62
Harrisburg Pipe & Pipe Bending Company 22-23-39
Heitmann, F. W., & Co.....61
Herald Brothers 62
Heydrick Mapping Company....63
Hirsch & Hannay.....62
Hope Engineering Company.... *
Hopkins, Edwin B.....62
Hough Mfg. Co., Chas. N.....57
Holt Manufacturing Co., Inc....48
Houston Oil Field Material Co..61
Hudson, Thomas F.....61
Hughes Tool Co.....Back Cover
Humble Oil & Refining Co..... *

I

Imperial Brass Mfg. Co..... *
Improved Rotary Bit Company.. *
International Supply Company.. *
International Derrick & Equipment Company ..... *

J

Jones Company, S. M..... *

K

Kansas City Hay-Press Co.....40
Kansas City Structural Co..... *
Keystone Pipe & Supply Co....69
Keystone Driller Co.....33
Kuehnle, Erick F.....62

L

Layne & Bowler.....70
Lassen Hotel 17
Lockett, A. M., & Co..... *
Ludlow Valve Mfg. Corp..... *
Lucey Manufacturing Corp.....34
Lufkin Foundry & Machine Co..15

M

Maloney Tank Mfg. Co..... Front Cover
Matson, George C.....62
McGregor Working Barrel Co.. *
Moore, Lee C., & Co.....45
Myrick Machine Company..... *

N

National Supply Companies.....68
National Transit Pump & Machine Company 8
Norris Bros. 57

O

Oil City Iron Works..... *
Oil Well Supply Company.....66
Oil Well Service Company.....61

P

Palmer Specialty Company..... *
Parkersburg Rig & Reel Co.... *
Peden Iron & Steel Co.....42
Pelican Well Tool & Supply Co.48
Pennsylvania Tank Car Co.....54
Petroleum Rectifying Co.....39
Petroleum Supply Company.....69
Pioneer Tank & Boiler Co..... *
Prentiss Vise Company..... *

R

Reading Iron Company.....51
Rossendale Reddaway Belting & Hose ..... *
Reading Steel Casting Co..... *
Rotary Disc Bit Company..... *
Robinson Packer Company..... *
Republic Supply Company..... *
Rock Island Plow Company.... *

S

Safety Pulling Machine Co..... *
Schofield, D. L. ..... *
Shaffer Company, J. E..... *
Sinclair Ref. Co..... *
Southern Engine & Pump Co... *
Southern Engineering Sup. Co..63
Southwest General Electric Co..55
Spence, H. M. 33
Standard Seamless Tube Co....56
Stone, Jesse R.....62
Sullivan Machine Company.....38
Sunshine State Oil & Ref. Co..54
Superior Tube Company..... *

T

Tucker, Jas. I., Company.....62
The Texas Company..... *
Texas Oil Pump Company.....58
Texas Pipe & Supply Co.....61
Texas Petroleum Bureau.....63
Trumble Gas Trap Co..... *
Tulsa Boiler & Sheet Iron Works *
Tulsa Rig Reel & Manufacturing Company . . .Inside Front Cover
Titusville Iron Works Co..... 4

U

United Iron Works, Inc.....42

V

Vinson, Elkins & Wood.....62
Voorhees Rubber Mfg. Co.....61

W

Webster, C. W. 63
Westcott Valve Company, Inc.. *
Western Machinery Company.. *
Westinghouse Electric Mfg. Co.. *
Wilson & Willard Mfg. Co.....40
Williams, F. N. 62
Williamsport Wire Rope Distributing Company ..... *
Wyatt Metal & Boiler Works... *
W-K-M Co. ..... *

*Printed in one or more issues in each month.

FOR ROTARY OR STANDARD DRILLING

A CROWN BLOCK BUILT FOR REAL SERVICE

"GULFCO" Products

Can now be had from stock at any of the following stores of the

PETROLEUM SUPPLY CO.

Smackover, Ark.
El Dorado, Ark.
Shreveport, La.
Houston, Tex.
Norphlet, Ark.
Mexia, Tex.
Corsicana, Tex.

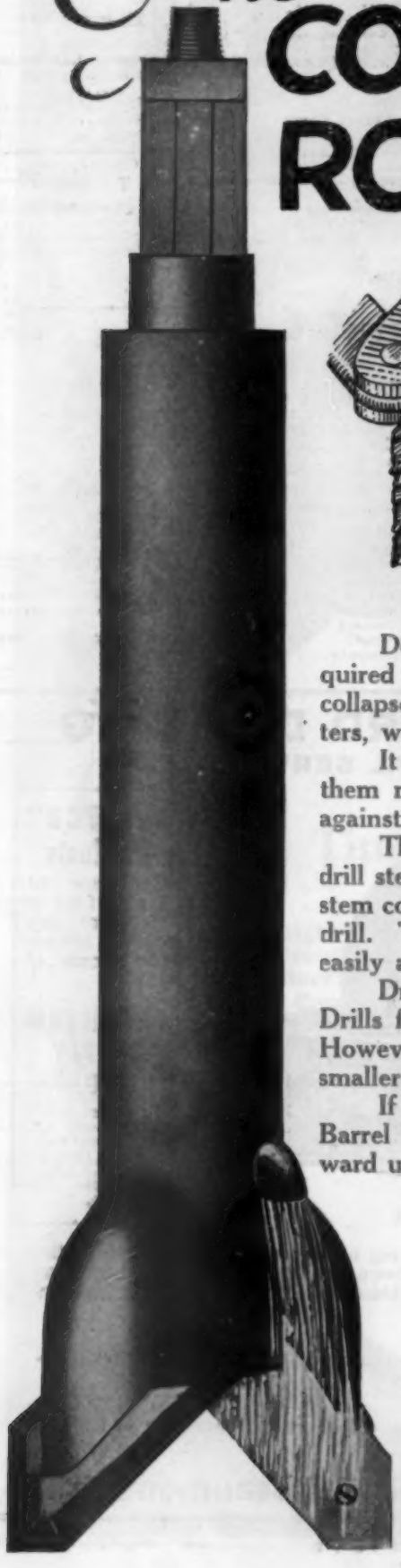
1. Instead of ordinary bearings which must be oiled frequently, requiring numerous trips to the top of the derrick, and requiring a real replacement job when the babbitt wears down, the new Gulfco Crown Block has special bronze bushings that can be replaced without the pouring of babbitt; and is so oiled that the bearings are at all times running in an oil bath, protected from the weather.
2. It is extra heavy, built to stand any drilling depth.
3. It is made in any combination from two to seven sheaves with the sheaves of such thickness that it requires twice the wear of an ordinary crown-bock to cut them down.
4. It is made up on 10-inch, 35-lb. I-beams.

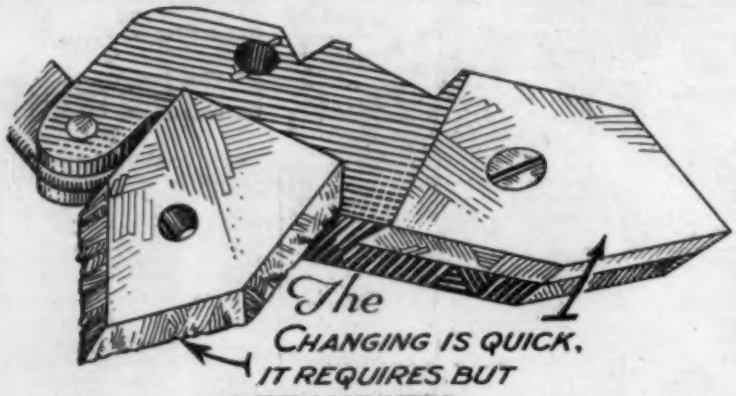
We shall be glad to tell any operator in the States or Mexico about this crown block that is built to eliminate worry and reduce expense.

Gulf Coast Machine & Supply Company, Beaumont, Texas

Guide for Purchasers on Pages 73-74

The STANDARD COLLAPSIBLE ROTARY DRILL





The CHANGING IS QUICK, IT REQUIRES BUT A FEW MINUTES

Descends inside the drill stem and expands to required diameter at bottom of the collar. It is quickly collapsed and withdrawn to surface for change of cutters, without removing drill stem.

It is the driller's and roughneck's friend, as it saves them much labor, and is the well owner's protection against rapid depletion of his bank account.

The Core Barrel descends like the drill inside the drill stem and is revolved by lugs in bottom of the drill stem collar. It is withdrawn in the same manner as the drill. The cutters are removable and when dull can be easily and quickly replaced.

Drills for 4 inch drill stem cut 8 and 10 inch holes. Drills for 6 inch drill stem cut 14 and 16 inch holes. However, each drill can be equipped to cut larger or smaller holes.

If the Standard Collapsible Rotary Drill and Core Barrel is used in your next well, you will never afterward use any other.

Write for booklet containing full information

MANUFACTURED EXCLUSIVELY BY

O. M. CARTER

206-7-8 SCANLAN BLDG.

HOUSTON, TEXAS

Say you saw it in The Oil Weekly

DEC 18 1923
©CIB605249

THE OIL WEEKLY

An International Oil Publication for Oil and Gas Producers

Copyright 1923 by the Gulf Publishing Company

MEMBER AUDIT BUREAU OF CIRCULATION

Established 1916

HOME OFFICE—Houston, 1716 Dallas Ave.
FORT WORTH—212 W. T. Waggoner Bldg.
TULSA—225 Atco Bldg.

Published weekly by
Gulf Publishing Company
HOUSTON, TEXAS
R. L. DUDLEY, EDITOR AND MANAGER

PITTSBURGH—1507 First Nat'l Bank Bldg.
CHICAGO—453 First National Bank Bldg.
LOS ANGELES—1201 Haas Bldg.

Vol. 31 | SATURDAY, DECEMBER 15, 1923 | No. 12

In this issue.

Optimism at St. Louis

The Fourth Annual Meeting of the American Petroleum Institute held at St. Louis during the past week was in every detail a success with a distinct note of optimism prevailing. Record attendance. Page 9.

Power vs. Cost

Among other subjects taken under consideration at the Group Session of the Standardization of Oil Drilling Methods at the A. P. I. meeting was the use of electrical power for drilling and pumping. This discussion was handled by an engineer who has spent much time in the fields and furnishes some interesting comparisons on power costs. Page 19.

A Dollar a Foot

Is the price some operators are now being able to drill test wells for as a result of the manufacture of lighter and faster equipment. Many types of machines used for experimenting in the Coastal section. Page 25.

Pipe Line Problems

How they were met and overcome by one of the country's pioneer pipe liners, was told by D. S. Bushnell to those attending the A. P. I. meeting and many useful suggestions for future practice were included in his paper. Page 29.

Three in One

One Oklahoma company has all three branches of the oil industry concentrated in one. The producing well, gasoline plant and market are together. See how they do it. Page 21.

Too Costly

Foster Bain tells investigators that government operation of Naval Oil Reserves would be impractical. He also says that lease with Mammoth Oil Company was best move. Page 13.

What Part it Plays

Steel used in the manufacture of oil field equipment to a great extent governs the operating efficiency of the industry. This subject was presented by the Bureau of Mines Metallurgist before A. P. I. members and visitors. What he told them will be found on page 11.

Regular Features

Arkansas	38
Production Tables	32
Crude Oil Market	16-17
Coastal Bollweevil	69
Corsicana	37
Eastern States	39
U. S. Completions Begin	41
Louisiana Fields	38
Field Notes Begin	31
New Equipment	67
Manufacturers' Notes	*
North Central Texas	36
Permits to Drill	28
Personals	27
"Squeaks"	71
West Coast	31-33
Wildcats	53-62

KEY TO ABBREVIATIONS

Following is the explanation of abbreviations and signs used in drilling reports, completions, etc.: *—dry, abandoned well; ‡—salt water; †—junked and abandoned; ¶million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking, sp—spudded; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo workover; wosr—waiting on standard rig.

Turn it Loose

Is advice to operators having wildcat acreage in Texas which will expire shortly after the first of the year. A new ruling further increases the oil tax burden. Page 16.

More Smackover Gas

Bureau of Mines engineers believe from recent investigations that there is another gas bearing zone of considerable importance in the East Smackover field in Arkansas. Page 30.

California Wildcatting

Faced with the proposition that their storage program was too ambitious, California operators are seeking new fields to supply the decline of the older fields. Page 31.

Burbank Holds

Decrease in daily production in Oklahoma is due to shut down at Burbank, which will be continued another month. Pages 35.

Flood at its Level

It is indicated that the slump to 105,000 barrels at Corsicana means that this field has settled down for a production around 100,000 barrels per day. Page 36.

Increase Drilling

Since crude purchasers are seeking connections, there is a marked increase in drilling in North and Central West Texas, particularly in Archer County. Page 37.

Showing Oil

Webster Parish, Louisiana, well has too much oil to be handled as a gas well, turning into gas line proves. See page 38.

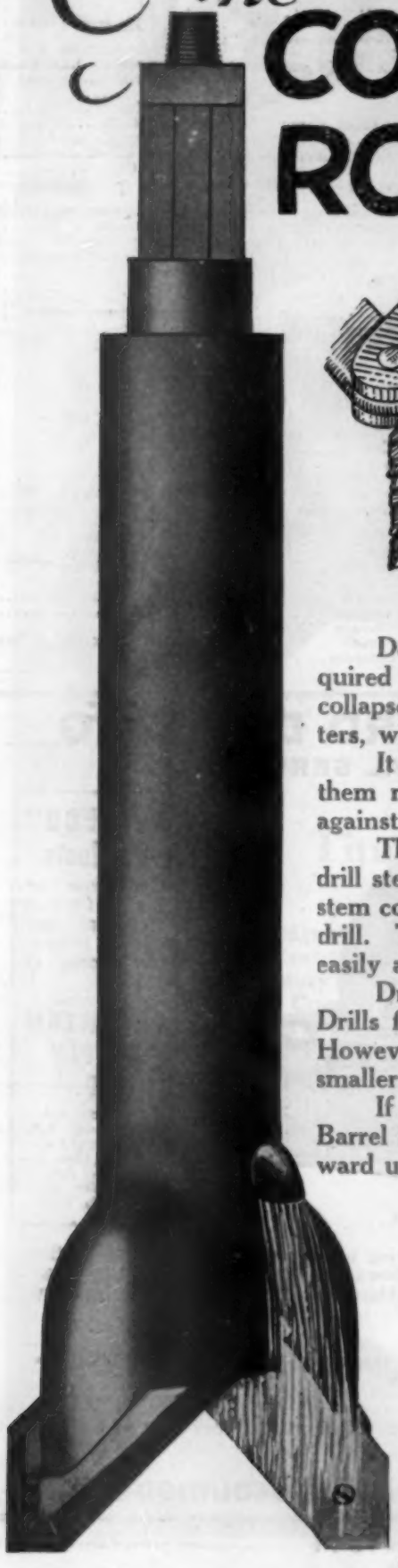
No Rush in East

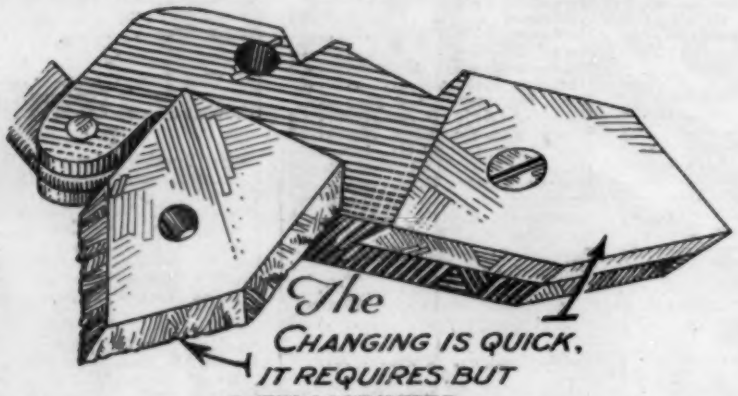
Eastern operators are encouraged by the decline of the flush fields in California and Texas, but are going ahead slowly. Page 39.

SUBSCRIPTION RATES
One Year...$1.00 The Copy...$ .10 Foreign Subscription...$2.00

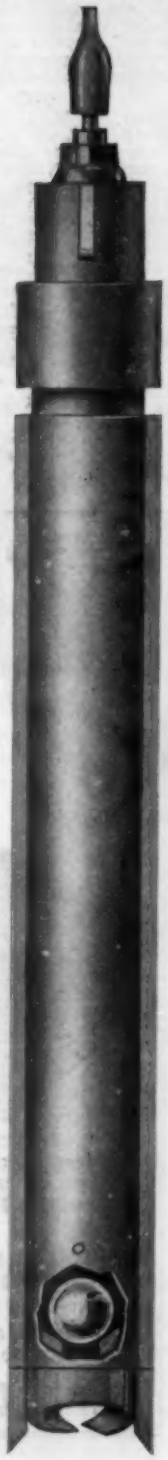
ADVERTISING RATES
on application. Accounts payable to GULF PUBLISHING CO.

The STANDARD COLLAPSIBLE ROTARY DRILL





The CHANGING IS QUICK, IT REQUIRES BUT A FEW MINUTES



Descends inside the drill stem and expands to required diameter at bottom of the collar. It is quickly collapsed and withdrawn to surface for change of cutters, without removing drill stem.

It is the driller's and roughneck's friend, as it saves them much labor, and is the well owner's protection against rapid depletion of his bank account.

The Core Barrel descends like the drill inside the drill stem and is revolved by lugs in bottom of the drill stem collar. It is withdrawn in the same manner as the drill. The cutters are removable and when dull can be easily and quickly replaced.

Drills for 4 inch drill stem cut 8 and 10 inch holes. Drills for 6 inch drill stem cut 14 and 16 inch holes. However, each drill can be equipped to cut larger or smaller holes.

If the Standard Collapsible Rotary Drill and Core Barrel is used in your next well, you will never afterward use any other.

Write for booklet containing full information

MANUFACTURED EXCLUSIVELY BY

O. M. CARTER

206-7-8 SCANLAN BLDG.

HOUSTON, TEXAS

Say you saw it in The Oil Weekly

DEC 18 1923
©CIB605249

THE OIL WEEKLY

An International Oil Publication for Oil and Gas Producers

Copyright 1923 by the Gulf Publishing Company

MEMBER AUDIT BUREAU OF CIRCULATION

Established 1916

HOME OFFICE—Houston, 1716 Dallas Ave.
FORT WORTH—212 W. T. Waggoner Bldg.
TULSA—225 Atco Bldg.

Published weekly by
Gulf Publishing Company
HOUSTON, TEXAS
R. L. DUDLEY, EDITOR AND MANAGER

PITTSBURGH—1507 First Nat'l Bank Bldg.
CHICAGO—453 First National Bank Bldg.
LOS ANGELES—1201 Haas Bldg.

Vol. 31 | SATURDAY, DECEMBER 15, 1923 | No. 12

In this issue.

Optimism at St. Louis

The Fourth Annual Meeting of the American Petroleum Institute held at St. Louis during the past week was in every detail a success with a distinct note of optimism prevailing. Record attendance. Page 9.

Power vs. Cost

Among other subjects taken under consideration at the Group Session of the Standardization of Oil Drilling Methods at the A. P. I. meeting was the use of electrical power for drilling and pumping. This discussion was handled by an engineer who has spent much time in the fields and furnishes some interesting comparisons on power costs. Page 19.

A Dollar a Foot

Is the price some operators are now being able to drill test wells for as a result of the manufacture of lighter and faster equipment. Many types of machines used for experimenting in the Coastal section. Page 25.

Pipe Line Problems

How they were met and overcome by one of the country's pioneer pipe liners, was told by D. S. Bushnell to those attending the A. P. I. meeting and many useful suggestions for future practice were included in his paper. Page 29.

Three in One

One Oklahoma company has all three branches of the oil industry concentrated in one. The producing well, gasoline plant and market are together. See how they do it. Page 21.

Too Costly

Foster Bain tells investigators that government operation of Naval Oil Reserves would be impractical. He also says that lease with Mammoth Oil Company was best move. Page 13.

What Part it Plays

Steel used in the manufacture of oil field equipment to a great extent governs the operating efficiency of the industry. This subject was presented by the Bureau of Mines Metallurgist before A. P. I. members and visitors. What he told them will be found on page 11.

Regular Features

Arkansas	38
Production Tables	32
Crude Oil Market	16-17
Coastal Bollweevil	69
Corsicana	37
Eastern States	39
U. S. Completions Begin	41
Louisiana Fields	38
Field Notes Begin	31
New Equipment	67
Manufacturers' Notes	*
North Central Texas	36
Permits to Drill	28
Personals	27
"Squeaks"	71
West Coast	31-33
Wildcats	53-62

KEY TO ABBREVIATIONS

Following is the explanation of abbreviations and signs used in drilling reports, completions, etc.: *—dry, abandoned well; ‡—salt water; †—junked and abandoned; ¶million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking, sp—spudded; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo workover; wosr—waiting on standard rig.

Turn it Loose

Is advice to operators having wildcat acreage in Texas which will expire shortly after the first of the year. A new ruling further increases the oil tax burden. Page 16.

More Smackover Gas

Bureau of Mines engineers believe from recent investigations that there is another gas bearing zone of considerable importance in the East Smackover field in Arkansas. Page 30.

California Wildcatting

Faced with the proposition that their storage program was too ambitious, California operators are seeking new fields to supply the decline of the older fields. Page 31.

Burbank Holds

Decrease in daily production in Oklahoma is due to shut down at Burbank, which will be continued another month. Pages 35.

Flood at its Level

It is indicated that the slump to 105,000 barrels at Corsicana means that this field has settled down for a production around 100,000 barrels per day. Page 36.

Increase Drilling

Since crude purchasers are seeking connections, there is a marked increase in drilling in North and Central West Texas, particularly in Archer County. Page 37.

Showing Oil

Webster Parish, Louisiana, well has too much oil to be handled as a gas well, turning into gas line proves. See page 38.

No Rush in East

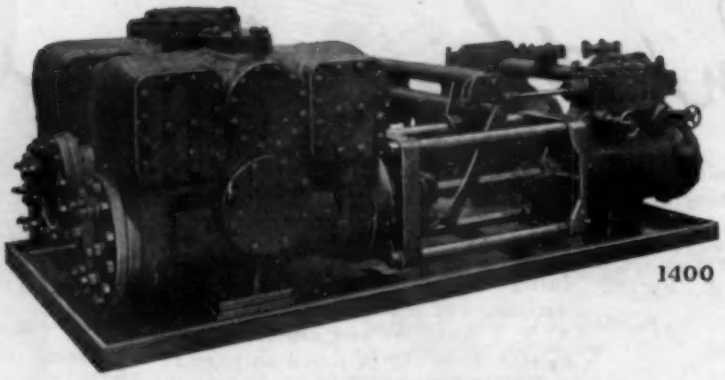
Eastern operators are encouraged by the decline of the flush fields in California and Texas, but are going ahead slowly. Page 39.

SUBSCRIPTION RATES
One Year...$1.00 The Copy...$ .10 Foreign Subscription...$2.00

ADVERTISING RATES
on application. Accounts payable to GULF PUBLISHING CO.

PUMPS HOT TAR

without churning



12x9x18" Block Valve Pump with base plate drip pan, for 300 lbs. working pressure

The New TRANSIT Heavy Duty Block Valve Pump was designed to handle either hot or heavy liquids or semi-liquids around refineries. The material pumped is introduced and expelled from the pump through large direct fluid passages of easy turns and bends that cannot trap air and through special design valves now made larger than ever. The large fluid passages handle the fluid easily and efficiently without churning.

Pumping hot tar around 700° Fahr. is hard on rod packing. So the stuffing boxes are made deeper to lessen wear on the packing and rods. Tie-bar construction renders the stuffing boxes easier of access, thereby inviting more frequent and accurate adjustments.

NATIONAL TRANSIT
Pump & Machine Company
OIL CITY, PA.

DISTRICT OFFICES

Kansas City Denver Houston New York Pittsburgh Cleveland Philadelphia

Optimism Prevailing Note at A. P. I. Meet

Doherty points out possibilities of initiative creating additional large markets

St. Louis, Mo., Dec. 12.—With a distinct note of optimism prevailing among its membership from all sections of the country, the American Petroleum Institute opened its annual meeting here Tuesday with the promise of a record attendance. The formal opening Tuesday was preceeded by various committee meetings on Monday.

The outstanding feature of the first two days of the meeting was the address by Henry L. Doherty of New York, who proposed a sales campaign which he asserted will bring to the oil industry additional income of more than a billion dollars a year. His address, which was closely followed by an audience that completely filled the banquet room of the Hotel Statler, sharply criticised the industry for its lack of initiative in developing new markets or improving old markets for its products.

"I, for one, am tired of seeing a period of over production occur and then have everybody sit down and wait for something to happen," he said. "There may be a special providence for old women, little children and drunken men, but there seems to be none for the oil business. What we need is less wind and more work, less talk and more thought, less bellyaching and more brain effort, less bile and more guts."

His sales plan would involve the expenditure of approximately $100,000 a year, to be used in developing new uses for petroleum products, and advertising such products in a way to assist the oil industry in cashing in on it with individual sales effort. He also proposed that an effort be made to change the "basic methods of producing crude oil so that the raw product will be located in vast quantities and blocked out in large amounts so as to be readily accessible and under conditions whereby it will not have to be forced upon the market in excess of what the market will absorb."

He referred to the efforts being made by oil burner concerns to develop burners and a household market for these burners which will in turn mean a bigger market for petroleum.

He said that an over production of 200,000 barrels of oil a day would only have to "cut in" on the sale of hard fuel to the extent of seven per cent of the hard fuel market to be completely absorbed. Yet the oil industry, he declared, seems to regard this 200,000 barrels per day over production as something that could not be combatted nor cared for.

His address will be printed in full in next week's OIL WEEKLY.

Governmental Interference

Thomas A. O'Donnell, president of the American Petroleum Institute, again affirmed his opposition to government interference in any business that is being operated fairly. He commented on the note of optimism prevalent at the Institute meeting and warned the producers against "going out and drilling your heads off." He intimated his belief that stocks will be drawn upon within six months unless the producers "go crazy and drill their heads off."

O'Donnell refuted charges that control of the oil business is in the hands of any few individuals, corporations, or family. He said that there is no family that holds in its hands five per cent of the aggregate oil property in the United States.

He expressed doubt as to the possibility of improving the condition in which the oil business has found itself, but after Doherty's address, explained that he did not disagree with Doherty. O'Donnell's address was full of his quaint comments on situations full of humor and good sense, but did not fail to make his customary shot at geologists, two shots in fact. The first one "went over" but the second one, in army parlance, seemed to be a "dud."

He cautioned the industry against seeking to improve its condition through the passage of laws, saying, "The law would create more evil than damage that has been done by the thing I would ask to be corrected, so I am going to stay away from them if you will let me."

After taking a sharp rap at some whom he described as not being members of the Institute who "want to reorganize it", he said that he took this as a sign that the Institute is functioning more actively than it has before, and in concluding his address he used these words: "The economic way to handle the petroleum industry of America is to put it under one man's supervision, all in one man's hands. We could eliminate thousands of filling stations and hundreds of other things; the wells could be properly distributed and it would be lovely if it were run by one organization, but there would not be room for half of you fellows who are in here, except on a salary, and who wants to be the cog in that wheel anywhere up the line, having to wait for somebody to die before you can go any higher?

"I don't believe in it; I believe that what we want is to conduct the business with reasonable care but the confusion, the opportunity, and its widespread activity is a good thing for American citizens."

St. Louis, Mo., Dec. 13.—The American Petroleum Institute had two important things before it at this session—the question of developing new markets for petroleum products and the question of simplifying or standardizing oil field equipment and methods.

Both of these subjects are receiving serious consideration and numerous papers were read on them. It is expected that some real action will come from this year's meeting.

Reports on the meetings are too voluminous to be published in one issue of The OIL WEEKLY—the Institute meeting was like a three ring circus—but these reports will be given in all possible completeness in succeeding issues.

Directors Elected at St. Louis

St. Louis, Mo., Dec. 12.—Directors for the American Petroleum Institute for the production and "at large" divisions were elected as follows:

J. Edgar Pew, Sun Oil Company, Dallas, Texas, succeeding F. C. Proctor, Houston, Texas, whose term expired.

Representing the "at large" group; A. C. Bedford, Standard Oil Company (New Jersey), New York; Alexander Deussen, American Association of Petroleum Geologists, Houston, Texas, and George H. Davison, Gulf Refining Company, Pittsburgh, Pennsylvania, succeeding Sheldon Clark, Sinclair Refining Company, Chicago; T. J. Gay, Gay Oil Company, Little Rock, and Geo. T. Brockway, Seneca Oil Works, Warren, Pennsylvania.

The following directors whose terms expired were re-elected:

Pacific Coast (Production) Group: M. L. Reoua, San Francisco, California.

Rocky Mountain (Production) Group: B. B. Brooks, Consolidated Royal Oil Company, Casper, Wyoming.

Central United States (Production) Group: J. H. Markham, Jr., Tulsa, Oklahoma; J. D. Collett, O'Keefe & Collett, Fort Worth, Texas, and Frank Haskell, Tidal Oil Company, New York.

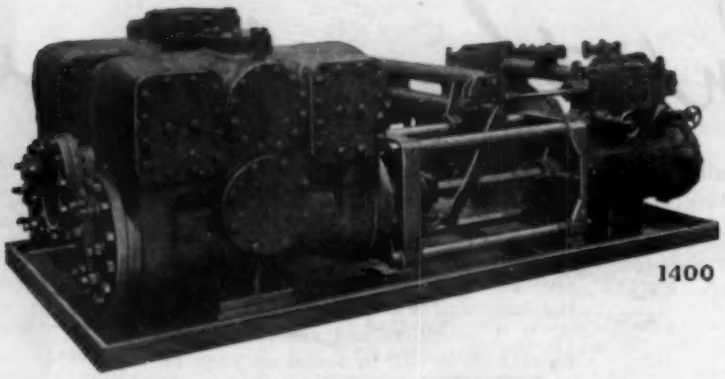
Eastern United States (Production) Group: J. C. Donnell, Ohio Oil Company, Findlay, Ohio.

Representing the "at large" group: W. N. Davis, Mid-Continent Oil and Gas Association, Tulsa, Oklahoma; E. C. Lufkin, Texas Company, New York; E. B. Reeser, Bransdall Corporation;

The OIL WEEKLY wants only such subscribers as are engaged in the oil producing or pipe line business, or sub-branches of the producing and pipe line business. It has no desire for investor circulation, and it reserves the right and will exercise the right to reject subscriptions coming from persons whose only interest in the oil industry is through the purchase of oil stock.
R. L. DUDLEY, Publisher.

PUMPS HOT TAR

without churning



12x9x18" Block Valve Pump with base plate drip pan, for 300 lbs. working pressure

The New TRANSIT Heavy Duty Block Valve Pump was designed to handle either hot or heavy liquids or semi-liquids around refineries. The material pumped is introduced and expelled from the pump through large direct fluid passages of easy turns and bends that cannot trap air and through special design valves now made larger than ever. The large fluid passages handle the fluid easily and efficiently without churning.

Pumping hot tar around 700° Fahr. is hard on rod packing. So the stuffing boxes are made deeper to lessen wear on the packing and rods. Tie-bar construction renders the stuffing boxes easier of access, thereby inviting more frequent and accurate adjustments.

NATIONAL TRANSIT
Pump & Machine Company
OIL CITY, PA.

DISTRICT OFFICES

Kansas City Denver Houston New York Pittsburgh Cleveland Philadelphia

Optimism Prevailing Note at A. P. I. Meet

Doherty points out possibilities of initiative creating additional large markets

St. Louis, Mo., Dec. 12.—With a distinct note of optimism prevailing among its membership from all sections of the country, the American Petroleum Institute opened its annual meeting here Tuesday with the promise of a record attendance. The formal opening Tuesday was preceeded by various committee meetings on Monday.

The outstanding feature of the first two days of the meeting was the address by Henry L. Doherty of New York, who proposed a sales campaign which he asserted will bring to the oil industry additional income of more than a billion dollars a year. His address, which was closely followed by an audience that completely filled the banquet room of the Hotel Statler, sharply criticised the industry for its lack of initiative in developing new markets or improving old markets for its products.

"I, for one, am tired of seeing a period of over production occur and then have everybody sit down and wait for something to happen," he said. "There may be a special providence for old women, little children and drunken men, but there seems to be none for the oil business. What we need is less wind and more work, less talk and more thought, less bellyaching and more brain effort, less bile and more guts."

His sales plan would involve the expenditure of approximately $100,000 a year, to be used in developing new uses for petroleum products, and advertising such products in a way to assist the oil industry in cashing in on it with individual sales effort. He also proposed that an effort be made to change the "basic methods of producing crude oil so that the raw product will be located in vast quantities and blocked out in large amounts so as to be readily accessible and under conditions whereby it will not have to be forced upon the market in excess of what the market will absorb."

He referred to the efforts being made by oil burner concerns to develop burners and a household market for these burners which will in turn mean a bigger market for petroleum.

He said that an over production of 200,000 barrels of oil a day would only have to "cut in" on the sale of hard fuel to the extent of seven per cent of the hard fuel market to be completely absorbed. Yet the oil industry, he declared, seems to regard this 200,000 barrels per day over production as something that could not be combatted nor cared for.

His address will be printed in full in next week's OIL WEEKLY.

Governmental Interference

Thomas A. O'Donnell, president of the American Petroleum Institute, again affirmed his opposition to government interference in any business that is being operated fairly. He commented on the note of optimism prevalent at the Institute meeting and warned the producers against "going out and drilling your heads off." He intimated his belief that stocks will be drawn upon within six months unless the producers "go crazy and drill their heads off."

O'Donnell refuted charges that control of the oil business is in the hands of any few individuals, corporations, or family. He said that there is no family that holds in its hands five per cent of the aggregate oil property in the United States.

He expressed doubt as to the possibility of improving the condition in which the oil business has found itself, but after Doherty's address, explained that he did not disagree with Doherty. O'Donnell's address was full of his quaint comments on situations full of humor and good sense, but did not fail to make his customary shot at geologists, two shots in fact. The first one "went over" but the second one, in army parlance, seemed to be a "dud."

He cautioned the industry against seeking to improve its condition through the passage of laws, saying, "The law would create more evil than damage that has been done by the thing I would ask to be corrected, so I am going to stay away from them if you will let me."

After taking a sharp rap at some whom he described as not being members of the Institute who "want to reorganize it", he said that he took this as a sign that the Institute is functioning more actively than it has before, and in concluding his address he used these words: "The economic way to handle the petroleum industry of America is to put it under one man's supervision, all in one man's hands. We could eliminate thousands of filling stations and hundreds of other things; the wells could be properly distributed and it would be lovely if it were run by one organization, but there would not be room for half of you fellows who are in here, except on a salary, and who wants to be the cog in that wheel anywhere up the line, having to wait for somebody to die before you can go any higher?

"I don't believe in it; I believe that what we want is to conduct the business with reasonable care but the confusion, the opportunity, and its widespread activity is a good thing for American citizens."

St. Louis, Mo., Dec. 13.—The American Petroleum Institute had two important things before it at this session—the question of developing new markets for petroleum products and the question of simplifying or standardizing oil field equipment and methods.

Both of these subjects are receiving serious consideration and numerous papers were read on them. It is expected that some real action will come from this year's meeting.

Reports on the meetings are too voluminous to be published in one issue of The OIL WEEKLY—the Institute meeting was like a three ring circus—but these reports will be given in all possible completeness in succeeding issues.

Directors Elected at St. Louis

St. Louis, Mo., Dec. 12.—Directors for the American Petroleum Institute for the production and "at large" divisions were elected as follows:

J. Edgar Pew, Sun Oil Company, Dallas, Texas, succeeding F. C. Proctor, Houston, Texas, whose term expired.

Representing the "at large" group; A. C. Bedford, Standard Oil Company (New Jersey), New York; Alexander Deussen, American Association of Petroleum Geologists, Houston, Texas, and George H. Davison, Gulf Refining Company, Pittsburgh, Pennsylvania, succeeding Sheldon Clark, Sinclair Refining Company, Chicago; T. J. Gay, Gay Oil Company, Little Rock, and Geo. T. Brockway, Seneca Oil Works, Warren, Pennsylvania.

The following directors whose terms expired were re-elected:

Pacific Coast (Production) Group: M. L. Reoua, San Francisco, California.

Rocky Mountain (Production) Group: B. B. Brooks, Consolidated Royal Oil Company, Casper, Wyoming.

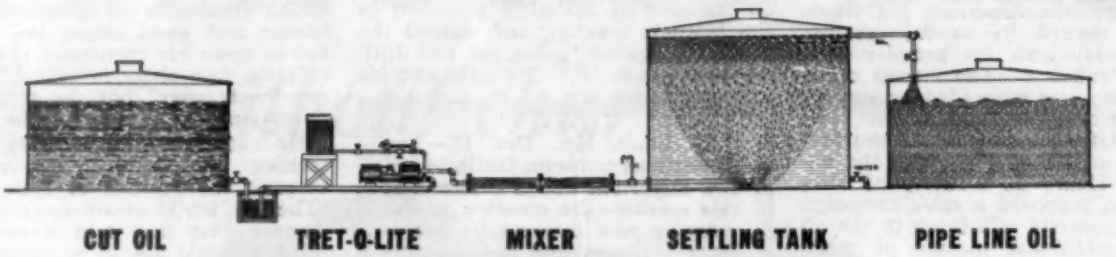
Central United States (Production) Group: J. H. Markham, Jr., Tulsa, Oklahoma; J. D. Collett, O'Keefe & Collett, Fort Worth, Texas, and Frank Haskell, Tidal Oil Company, New York.

Eastern United States (Production) Group: J. C. Donnell, Ohio Oil Company, Findlay, Ohio.

Representing the "at large" group: W. N. Davis, Mid-Continent Oil and Gas Association, Tulsa, Oklahoma; E. C. Lufkin, Texas Company, New York; E. B. Reeser, Bransdall Corporation;

The OIL WEEKLY wants only such subscribers as are engaged in the oil producing or pipe line business, or sub-branches of the producing and pipe line business. It has no desire for investor circulation, and it reserves the right and will exercise the right to reject subscriptions coming from persons whose only interest in the oil industry is through the purchase of oil stock.
R. L. DUDLEY, Publisher.

TYPES OF TRET-O-LITE PLANT



No. 4—Line Plant Without Heater

Delivers 200 to 20,000 or More Barrels of Pipe Line Oil Daily

In many districts the mere mixing of TRET-O-LITE into the cut oil, without subsequent heating, readily breaks the emulsion and causes the complete separation of oil and water. The above installation is designed for such a condition.

The TRET-O-LITE reservoir is supported on a platform 4 feet above the ground, the TRET-O-LITE feeding through a 1-inch pipe into the suction line close to the pump. A large size water gauge set is used as a sight feed.

A 2 per cent solution of TRET-O-LITE is recommended, using soft water or oil according to whether water or oil soluble TRET-O-LITE is used.

OPERATION. Open valve permitting emulsion to run into sump. Start pump and open valves, permitting TRET-O-LITE solution to pass through sight feed into suction line. Regulate flow of TRET-O-LITE through sight feed as required to break the emulsion, using 5 to 10 gallons of solution for 1000 barrels of fresh cut oil. Tank bottoms require more, usually 10 to 25 gallons. Mixing takes place in the Mixer shown, or a discharge line 1500 feet long gives complete mixing and makes the mixer shown unnecessary.

Take samples of treated oil from valve next to settling tank frequently.

Settling tank should be kept about half full of water.

Our book, "TRET-O-LITE," diagrams and describes 9 prevailing types of installation to meet varying conditions. We will gladly mail you a copy.

WM. S. BARNICKEL & CO.

ST. LOUIS, MO.

Office and Factory: Webster Groves, St. Louis Co., Mo.

Tret-O-lite

Reg. U. S. Pat. Off.

Steel a Big Factor in Field Efficiency

Requirements of oil industry demand that much attention be paid to equipment manufacture

By Francis B. Foley

FOR SOME time past the Bureau of Mines has been interested in the quality and performance of rock drill steel used mostly in metal mining. It was natural that this interest should broaden so as to take in steels used in oil well drilling. As far as the drill itself is concerned the difference between mining and oil well sinking is primarily one of magnitude. The metal miner drills with a tool of about a one inch section and at the most perhaps 14 feet long. He has a portable unit.

On the other hand the driller for oil uses for the same purpose a string of tools which may be a mile long and his bit may measure feet in sections where the miner's measures inches. His work of removing rock and dirt may be going on a mile away from him. The changing of a bit by a miner involves minutes where a bit change in oil well drilling involves hours. A broken part of an oil string not only involves the replacing of the part but time which may extend into weeks in getting hold of and removing the portion left in the hole.

The ratio of diameter to length in a string drilling by rotary may be 1 to 15,000 in a deep well, an idea of which may be conveyed by visualizing a one inch pipe a quarter of a mile long. If we put a chisel edge on one end of such a pipe, rest it on this edge and devolve the other end at 90 to 100 revolutions per minute, some idea is grasped of the work which this steel string has to perform.

Just as the automobile engineers found that they could not throw all the responsibility on the steel manufacturer to supply the correct material in the proper condition for various parts and had to educate themselves and finally carry on their own metallographic research with the results that they now specify their materials and treat them themselves, so the petroleum engineers, if they are to get the maximum satisfaction out of the equipment they are using, ultimately will have to learn something concerning what is and what is not good steel and what should and should not be done in heat treating and forging steel.

Getting down to the basis of oil field equipment manufacture, Mr. Foley has made a very extensive study of the needs and requirements of steel in this type of work.

At the group session on Oil Drilling Methods, on Wednesday evening, at the fourth annual meeting of the American Petroleum Institute, he gave the industry the advantage of his research.—The Editor.

We cannot expect the steel manufacturer to know the ins and outs of the petrolcum industry as well as the petroleum engineer does, any more than we can expect the petroleum engineer to know all the ins and outs of steel manufacture. Each, however, must know sufficient of the other business to be of mutual benefit. The steel man must know what kind of oil to use and how to use it properly, and the oil man ought to know what steel he wants and how to use it properly.

Disregard of Quality

Three incidents will serve very well to show what the oil producer brings on himself by his casual disregard of quality in the steel which he buys.

The first of these is a broken latch which failed suddenly while a pair of pipe tongs were under their highest stress. The tongs of course flew off the pipe and fortunately a man who was struct on the leg was not seriously injured. The fracture of the latch is shown in Figure 1. No microscope is needed to detect the cause of this failure, the shrinkage cavity which is shown extended out to the surface of the casting and any ordinay inspection would have caught it.

The second is a pin, again from a pair of tongs. This pin was put in place of one that had bent and before the tongs were fully tightened for the first time it snapped in two. While it takes a microscope to show the condition revealed in Figure 2, nevertheless it does not take an expert to determine from the figure that the metal is in poor condition. The figure shows every indication of non-uniformity of the metal and overheating. The pin probably was not heat treated at all.

The third is a case hardened roller from a roller chain used on a rotary rig. In the broken pieces of steel lying around the floor of a rotary rig, pieces of roller chain seem to predominate. Figure 3 shows the core of one of these picked up at random and Figure 4. shows the case of the same roller. Metallographically, the piece is in abominable shape. It has apparently been over heated during carbonizing, quenched from the high temperature and not heat treated at all afterwards. The case is made up of needle-like ferrite, martensite and troostite, the products of a sudden cooling from above the critical range. The acicular form of the ferrite (white constituent in Figure 4) and that of the core (Figure 3) show that the cooling was from considerably above the critical temperature.

Metallographic Practice

Ordinary regard for good metallographic practice would prevent any of the above conditions, but apparently there are producers of oil well drilling equipment who are either totally ignorant of what is good pratice or else they are extremely careless, or yet

*Published by permission of the Director of the U. S. Bureau of Mines.

J. F. Lucey, Lucey Manufacturing Corporation, New York; H. L. Doherty, H. L. Doherty & Company, New York; J. W. Van Dyke, Atlantic Refining Company, Philadelphia; H. F. Sinclair, Sinclair Consolidated Oil Corporation.

In addition to the directors re-elected, the following directors whose terms do not expire continue on the board:

Pacific Coast (Production) Group: L. P. St. Clair, Independent Oil Producers Agency, Los Angeles; F. H. Hillman, Standard Oil Company of California, San Francisco, and Dave S. Ewing, California Oil Company, San Francisco.

Central United States (Production) Group: W. S. Farish, Humble Oil and Refining Company, Houston, Texas.

Eastern United States (Production) Group: George W. Crawford, Ohio Fuel Supply Company, Pittsburgh, Pennsylvania.

Representing the Supply Group: A. A. Moody, Jarecki Manufacturing Company, St. Louis, Missouri.

Representing the Foreign Trade Group: W. C. Teagle, Standard Oil Company of New Jersey.

Representing the "At Large" Group: John Barneson, General Petroleum Corporation, Los Angeles; F. C. Henderson, Associated Oil Company, Los Angeles; C. D. Chamberlin, National Petroleum Association, Cleveland, and Julius Germany, Panhandle Refining Company, Dallas, Texas.

Fort Worth and Los Angeles Bid for Institute Meeting

St. Louis, Mo., Dec. 11.—Two cities have thrown their hats into the ring for the next annual meeting of the American Petroleum Institute. Fort Worth, which has been trying to "land" the Institute meeting for two years, is making a strong bid with sentiment apparently swinging in that direction.

Los Angeles is also making a strong bid for the meeting and is making a good showing.

The meeting place is chosen by the directors about two months before the meeting date is announced.

Lion Oil Refining Company Buys Oil Operators Trust

St. Louis, Mo., Dec. 11.—The Lion Oil Refining Company of El Dorado, Arkansas, has bought the properties of the Oil Operators Trust, a Fort Worth concern, in the Smackover pool, according to V. H. Smith, general manager of the Lion Oil Refining Company. The properties consist of 620 acres with 16 producing wells, a total production of 3000 barrels daily, tankage, etc.

The Lion Oil Refining Company plans to start the drilling of 10 wells on this property immediately. The company's El Dorado refinery is running about 8000 barrels of crude a day. Smith would make no statement as to the price paid, but it is rumored that the consideration was approximately two million dollars.

FIGURE 1

Fracture of broken latch from pipe tongs showing shrinkage cavity in casting. About 0.6 actual size

again they are overstepping the bounds in their sacrifice of quality for cheapness of product. How is the oil well producer to guard against such material? This is not an easy questioned to answer.

Good oil well drilling equipment is made. The writer has seen it made and knows that none of the members of the above chamber of horrors come from a plant where there was careful supervision of the various steps in fabricating and heat treating. What the oil producer needs, in the face of this apparent scheme of "caveat emptor" is to find out how much intelligence the seller is putting into the manufacture of his product and buy accordingly.

Another method would be to draw up specifications which would necessitate a force of inspectors to see that the specifications were lived up to. It would be costly and after all not accomplish any more than the first method.

No doubt the whole question has to be considered with regard to the size of the units that are in the market for the same products. The plan that would fit the small purchaser would not do for the large buyer. The larger buyer might well be able to afford to draw up specifications and to employ inspectors, whereas the small purchaser might not find the saving commensurate with such an expenditure.

Whether by organized effort on the part of the oil producers to insure themselves at least safe steel parts, or whether each individual is left to cope alone with his own problems, in the name of safety at least if not for efficiency, some check should be made on the quality of material used in oil well drilling.

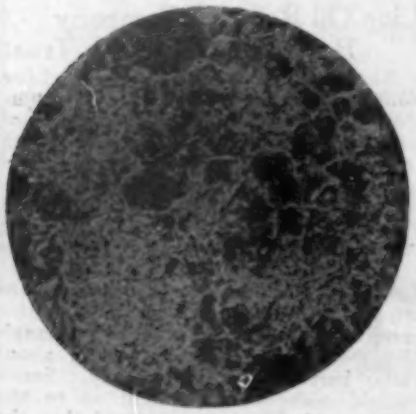


FIGURE 2

Photomicrograph of broken pin from pipe tongs showing segregation of iron (white constituent)

Manufacturing of Supplies

As concerns the manufacturing of oil well drilling supplies, one sees little evidence of anything of the nature of a serious problem; seldom anything involving more than an intelligent application of the principles of metallurgy and metallography. Needless to say these principles are easier to put into practice in well equipped clean shops, and shops producing oil well supplies range between the poorest equipped and dirtiest, to the best equipped and cleanest, and a wide range in quality of the materials produced is inevitable.

Some tools, notably bits, require forging and heat treating in the field. Where this kind of work has to be done in temporary shops by free lance workmen the conditions border on the impossible. Few of the facilities available in the permanent plant can be economically installed in these temporary shops. The furnaces particulary are quite curde. A fortunate condition exists in large fields where the larger producers have big holdings and have installed permanent central shop where bits are forged and tempered under the supervision usually of careful, skillful foremen.

Bits used in oil well drilling are farge and the very large cable tool bits have considerable mass. Even in a well equipped shop, such masses of steel would get great care from skilled working in heating and forging. The heat is under good control and that is essential. There is great danger in heating large masses of quickly attaining a high temperature on the surface of the metal while the center of the mass is at a considerably lower temperature. This often causes the metal to crack and gives a poor forging job. Another great danger comes from decarburizing the surface of the steel. This is caused by using an excess of air with the fuel; the excess air combining with the carbon in the steel and removing it as a gas, leaving behind carbonless iron over the surface of the metal, which it is impossible to harden in subsequently treating the bit. This decarburization goes on much more rapidly at high temperatures and is almost inevitably present in steel which has been subjected to too high a temperature, either for forging or hardening. Some degree of carburization is almost certain in the types of furnaces used by the field tool dressers. If there is total decarburization of the surface metal so that nothing remains but a skin of practically pure iron, the steel will not harden at all. If the decarburization has not been so severe so that there is only a reduction in the amount of carbon in the surface metal, then it may be possible to harden the metal, but the quench must be from a higher temperature than that which would suffice under normal conditions to produce hardness. Probably it is this which accounts for the great tendency to use high temperatures for hardening, a practice which is to be deplored because, while the temperature used might not adversely affect the skin of the steel it is often far too high a temperature for the metal beneath, which is of higher carbon. Quenching from too high a temperature produces a brittle steel.

A lead bath has been used with considerable success in hardening six inch cable tool bits. The temperature of the lead can be closely regulated by using a pyrometer. The tool is suspended from a cantilever arm over the pot with just the proper amount, say two inches, of the bit immersed in the lead. The arm carrying the tool can be swung so as to carry the tool over a bath of agitated water in which the tool is quenched. If the bit is quenched dead cold it will be too brittle, so that chipping results and to prevent this the time of immersion in the water can be 20 to 30 seconds so that the bit comes out warm enough and the heat in the portion which has not been in the water runs down into the tip and draws the temper at the edge. Another method of preventing the chipping which is equally successful but which requires more apparatus and time, is that of reheating the bit immediately after quenching it practically cold. For this purpose an oil bath is used. It is necessary in using a lead bath to keep the surface of the lead covered with a layer of carbon, otherwise the lead oxide formed on the surface of the bath will attack the steel at the point where it makes contact with it.

Fish tail bits do not present the difficulties of very great mass that the standard tools do, but the same precautions regarding decarburization and over heating are to be observed. Because the section is not so great, the

(Continued on page 16)

FIGURE 3

Photomicrograph of core of broken roller from roller chain showing acicular structure of ferrite (iron)

FIGURE 4

Photomicrograph of case of broken roller from roller chain showing troostite (black), acicular ferrite (white) and martensite (intermediate tone)

Government Operation Would Be Too Costly

Foster Bain tells investigating body; Bureau man tells why lease was good

By Clarence L. Linz

Government operation of oil lands would be costly, according to the testimony of Dr. H. Foster Bain, of the United States Bureau of Mines, before the Senate Committee on Public Lands which is making an investigation of the leases on Teapot Dome made by the Department of the Interior to the Mammoth Oil Company. Dr. Bain also testified that the end of the oil surplus is to come next year.

Much of the testimony of last week indicated that the Government had moved wisely in disposing by lease of the naval reserve oil lands for the reason that it will have a real reserve in tanks rather than a lot of oil underground, unrefined, and many miles from point of consumption. The Government's plan provides for oil when, where and in the form wated.

End of Surplus

Basing his prediction on reports received by his bureau from experts in the field in whom he has confidence, Dr. Bain stated that he believed that the middle of next year will see an end of the present overproduction in the oil industry. Senator Walsh, of Montana, who is attacking the Government's plan, sought to obtain further information on this subject inquiring of the witness the period within which the Government might feel confident of obtaining in the open market almost any quantity of oil for storage as reserves.

Dr. Bain replied that while it is difficult to state a definite figure, it is possible that the Government could have its oil requirements filled for a number of years without difficulty, if it is willing to pay the price demanded for the product.

"Men in whom I have confidence believe the present surplus will be met by consumption by the middle of next year," he told the committee. "It is a fact that every company which has the capital is storing all it can and selling as little as possible at prevailing prices."

The witness explained the purpose of his visit to the home of Secretary Fall in December, 1921, at the time when Harry F. Sinclair, head of the Mammoth Oil Company, was a guest of the former Interior Department head. He stated that he had gone to Three Rivers, New Mexico, to carry to the Secretary a draft of the proposed storage construction plan and contract. He added that he was not aware of the presence of Mr. Sinclair in New Mexico until they met at the railroad station. It was his belief that the question of the Teapot Dome lease had come up only incidentally, and that the visit of Mr. Sinclair had to do with questions affecting leases of Osage Indian lands.

That huge sums of money would be required should the Government engage in the oil business on its own behalf was indicated by his estimate of $120,000,000 needed for drilling alone on Naval Reserve No. 1. Government development of the oil reserves had been considered by the California bureau of mines, he said, and this estimate arrived at. Added to this would be additional expenses for transportation and storage facilities, and, he told the Senators, it would cost the Government more than a private company, even with the same degree of economy and efficiency exercised, since the private company turns its money over rapidly in the period of development, while in the case of the Government the entire cost would have to be expended without return, thus making the gross cost the capital investment.

George Otis Smith, director of the Geological Survey, told the committee he still adhered to the opinion that drainage of the reserve was more than a possibility north of the fault which cuts across the structure, but that no drainage would occur from south of the fault. He quoted experts, however, who held that the first line of offset wells contracted for by the Interior Department would have been sufficient for the purpose of protecting the wells and that additional leasing which followed was unnecessary. This official had been called before the Committee to describe the surveys which led to the conclusion that the naval reserves were threatened because of drainage into adjoining fields.

"Delicate Job"

The Senators were much interested in the testimony describing the effect of squatters and of drainage. George H. Shuler, treasurer of the State of New York, told of ousting trespassers from Government oil properties in Wyoming when, as a captain of the United States Marine Corps, in July, 1922, he commanded a detachment of four men sent to Salt Creek to protect Federal interests.

His was "a very delicate job" according to the estimate of it made by Major General Lejeune, commandant of the Marine Corps, and Albert B. Fall, then Secretary of the Interior. He had also talked with the President, who was opposed to using force in ejecting the drillers, but finally consented and Captain Shuler and his men were dispatched on their mission. The dispossession of the drillers was accomplished without serious opposition, for ten minutes after the arrival of the detachment at Salt Creek operations ceased.

Number of Bidders

Dr. Bain was questioned as to the number of bidders for the Teapot Dome lease. He stated that the only information he had on that subject he had obtained from Mr. Fall and preferred to have the latter answer the committee questions. He stated, however, that he had personally asked the Union Oil Company to submit a bid. He defended the lease later made to Mr. Sinclair's company. He said that the government received about $1,400,000 more for its royalty oil under the lease than would have come from prevailing prices in the field.

Questions by Senator Walsh developed the fact that bonuses paid for separate leases of Government lands in Salt Creek field had totalled $1,300,000 and the royalty averaged 28.76 per cent, as compared with 16.5 per cent from the Sinclair lease. Dr. Bain contended, however, that the Sinclair lease was far more advantageous to the Government than any other proposal received, and immeasurably superior to any that could now be obtained. He declared, in answer to questions by Senator Lenroot, of Wisconsin, the latter would be found true because of the great decrease in the amount of oil indicated to be in the reserve.

This witness stated that he had received an official report showing the daily production of the Salt Creek Field to have decreased from 175,000 barrels in August, 1923, to 135,000 barrels at the present time. He said that the capacity of Reserve No. 3 had been greatly overestimated. Experts had allowed 50,000,000 barrels for the first Wall Creek sand, and none was found there, and had estimated that the second sands underlaid a tract of 5,500 acres, when, it has since developed, they cover a much smaller area. The original Bureau of Mines estimate was 135,000,000 barrels but it now appears that only 25,000,000 to 30,000,000 will be produced. Outside estimates had gone still further, running all the way from 300,000,000 to 500,000,000 barrels as total capacity.

Standard's Case

Attempts to start proceedings in 1921 against the Standard Oil Company of California on alleged charges of having fraudulently obtained title to sections 16 and 36 in Naval Reserve No. 1, were related by Lester C. Garnett. At that time this witness was in charge of the public lands division of the Department of Justice under Attorney General Palmer. Later he served as special assistant attorney general under the present Coolidge administration. He declared that he had made frequent attempts to confer with Attorney General Daugherty on this subject but failed. He left the department in May, 1921, no action having been taken by the Government.

Purchases of blooded cattle and additions to the bank account of former Secretary of the Interior Fall were also features of the week's hearings. Harry F. Sinclair told of having sold sever registered hogs and cattle from his Rancocas farm in New Jersey, receiving a check from Mr. Fall's partner for $1,100. Harris, the man who had sold his ranch to Mr. Fall, told of having acted as agent for Mr. Fall in the purchase of an additional 6,000 acres of land for $33,000. It is to be remembered that previous witnesses had referred to Mr. Fall as declaring that "politics had broken him financially and that he was retiring from the Senate and politics to endeavor to rehabilitate" his fortunes. The efforts seemed to have been to show Harry F. Sinclair to have been a "Santa Claus" confining his benevolence in this respect to the former Interior Department Secretary, while the latter engaged in heavy expenditures on his ranch at or about the time

of the visit of Mr. Sinclair to Three Rivers, New Mexico.

J. E. Benton, vice president and cashier of the First National Bank of El Paso, Texas, was called upon for information concerning the account of Mr. Fall. He referred to a deposit of $20,000 made in April, 1920, which the bank recorded as proceeding from the sale of Mr. Fall's newspaper interests. Other deposits were mentioned, but the committee did not question this witness in any detail as to the bank transactions of the former Interior Secretary.

Charles E. Hamel, who has been connected with the Departments of Justice and Interior, told the Senators that Naval Reserve No. 1 was originally part of the school lands granted to the State of California in 1853 in the belief that they were non-mineral lands. These lands were acquired by the Standard Oil Company of California in 1910. No oil was discovered upon this property until 1917. Since the latter year, however, large quantities of oil have been produced.

The right of the Standard Oil Company to this property was questioned, the witness said, two years after oil production had been begun and an investigation made. Final action in the case was reached in February, 1921, before Attorney General Daugherty took office.

Mr. Hamel declared that there was no element of fraud in the acquisition of these lands by the Standard Oil Company. He stated that in proceedings of this kind where it is sought to determine the non-mineral character of land, the action of the General Land Office is final. In this case the General Land Office had suggested hearings, he said, but the Secretary took action instead of complying with the request. It is not uncommon, the witness declared, for the Secretary of the Interior to act without the formality of holding hearings.

Recalled to the witness stand, Secretary of the Navy Denby was questioned on a number of points, but he informed the Senators that he could not remember the many details incident to the various oil transactions, adding that he left all such matter with Admiral Robinson, chief of the Navy's Bureau of Engineering.

Amarillo, Texas, Dec. 11.—The wildcat test of the Texas Company on the G. H. Saunders ranch, section 3, block 1, and three miles southeast of LeFors, in Gray County section of the Panhandle district, began making three million cubic feet of gas from top of lime pay at 2275 feet early this week. This test is due east of oil production in Carson County, and is credited with having logged traces of oil at 2140 and 2200 feet.

State's Ouster Suit Against Humble Heard in Austin

Austin, Texas, Dec. 13.—Testimony in the trial of the suit instituted by the attorney general seeking forfeiture of the charter and ouster from the state of Texas of the Humble Oil and Refining Company, was completed during six hours of the first day of the trial yesterday. Adjournment was taken until today, when arguments of counsel were heard, after which the court took the case under advisement. The case is in the fifty-third district court of Travis County, Judge George Calhoun presiding.

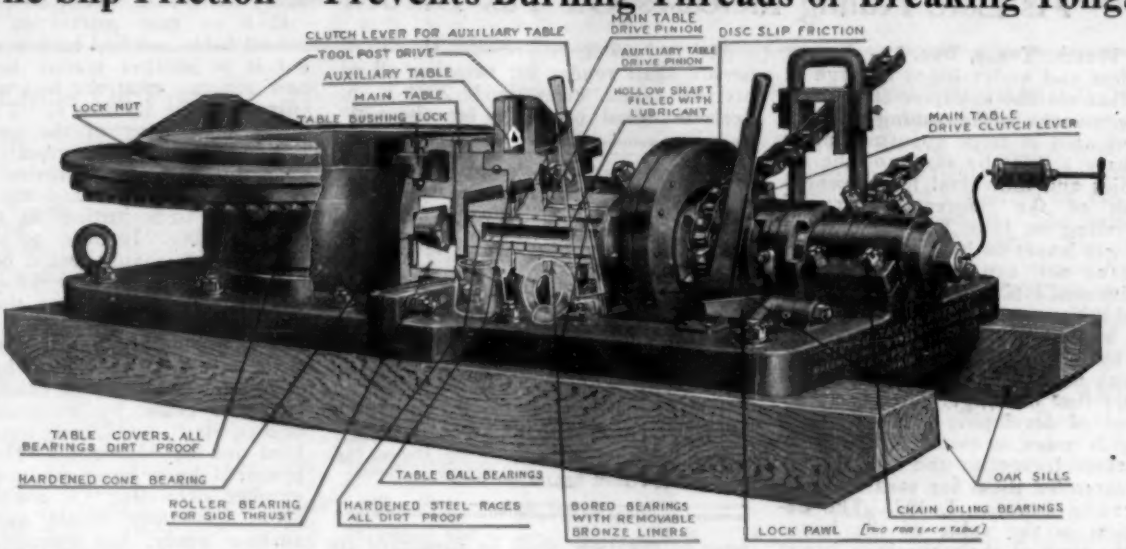
The basis of the suit is the allegation of the attorney general that the Standard Oil Company (New Jersey) owns a controlling interest in the Humble Oil and Refining Company in violation of the decree in an anti-trust suit which banished the Standard Oil Company from Texas several years ago. W. S. Farish, president of the Humble Company, was on the stand and admitted the ownership by the Standard Oil Company of 60 per cent of the Humble's stock, but the Humble is alleging that such ownership is not violation of the laws of the state or of the decree upon which this action is based. President Farish's testimony followed the signed statement given out to stockholders and employes shortly after the institution of the suit and published at that time.

The Humble Oil and Refining Company is represented at the trial by E. E. Townes, general counsel; J. C. Townes, Jr., general attorney; L. A. Carlton, Frank Andrews, John Mobley and H. H. Baker, all of Houston. Attorney General W. A. Keeling and Assistant Attorney General Frank M. Kemp appeared for the state.

Winchester, Ky., Dec. 11.—Directors and officers of the Cumberland Pipe Line Company have been re-elected at the company's annual meeting here.

The "Great Spirit"
of the Mid-continent Oil Fields
The Prophet Sought by the Oil Industry for Advice on Credits
Years ago; when Oklahoma, the Great Mid-Continent Oil fields of today, was virgin soil; tradition has it that the great spirit breathed a prophecy of untold riches for the Red-Man.
Today the prophecy is fulfilled beyond the dreams of the wildest imagination. Vast stretches of territory embracing half a dozen states, is dotted with clumps of derricks where the drill has touched. Railroads; pipe lines; highways; refineries; tank farms; supply houses have followed in the wake of oil. An industry with millions invested; more millions derived; more millions constantly in action through the interchange of business in the world of oil.
And today, in the Oil Industry the "Great Spirit" is still present. It is the spirit of a great bank—a bank breathing the very spirit of oil—all knowing, all seeing—a source of guidance and help to those who MUST know whose credit is good and to those who wish the goodness of their credit to be broadcasted to the world.
DIRECTORATE
E. W. Sinclair
W. A. Brownlee
J. A. Chapman
J. H. Bruns
Frank Haskell
A. Y. Alison
H. H. Rogers
J. A. Hull
H. G. Barnard
R. P. Brewer
Jno. Y. Murry
R. M. McFarlin
J. J. McGraw
J. H. Markham, Jr.
J. J. Larkin
D. H. Kelley
H. F. Sinclair
EXCHANGE BANKS OF TULSA
The Exchange National Bank
The Exchange Trust Company
Combined Resources Exceed Forty Million Dollars
4-23

The Slip Friction—Prevents Burning Threads or Breaking Tongs



Drillers who are skeptical as to the success of a make and break rotary should withhold judgment until they see a Lufkin-Taylor operate. They will eventually hold the field when all other types are in the discard.

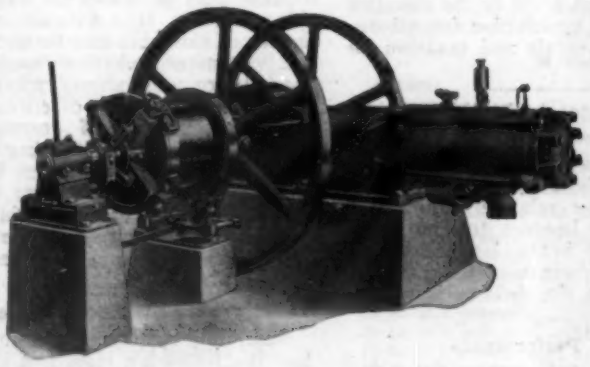
ASK FOR BULLETINS

LUFKIN FOUNDRY & MACHINE CO., Lufkin, Texas

A. J. CARR, 202 Carter Bldg., Houston, Sales Agent

Franklin Valveless Gas Engines

Have minimum parts. Require fewer adjustments. Eliminate valve grinding. Construction keeps out all sand and grit. Saves 75 per cent in lubrication cost over other type engines.



Franklin Type "S" Reversible Clutch

A strong, reliable, self-oiling, quiet running clutch—requiring little or no attention after once installed.

Well constructed—all parts are interchangeable. Lubrication of pulley, bushings and gears automatic and positive in action.

There is no better clutch made for oil field service than the FRANKLIN type 'S!

Descriptive Bulletins on Request

Distributed in Oklahoma, Kansas, Texas, Louisiana and Arkansas by

ATLAS SUPPLY COMPANY, MUSKOGEE, OKLAHOMA, and Branches

Ohio and West Virginia by

NEW MARTINSVILLE SUPPLY COMPANY, NEW MARTINSVILLE, W. VA.

FRANKLIN VALVELESS ENGINE COMPANY

Franklin :—: :—: Penna.

Say you saw it in The Oil Weekly

Texas Concerns Turn Loose Wildcat Leases As Late Ruling Increases Oil Tax Burden

Fort Worth, Texas, Dec. 11.—Leases on wildcat and undeveloped acreage in Texas that are due to expire during the first few months in the coming year are being released in large quantities prior to January 1, 1924 by many of the oil companies and individual lease owners as result of the Supreme Court of Texas ruling on June 30, 1923 that all oil and gas leases on land, whether productive or not, are taxable as is the case with real estate, etc. The enforcement of this new tax ruling greatly adds to the burden of taxes already shouldered by the oil industry, and many operators having leases in sections of the state that no longer offer early indications of developing production are finding it more economical to relinquish their leases on the land rather than to render them for taxation purposes as of January 1, 1923. The depreciation in the value of the leases since the time of their purchase is not taken into consideration when the assessment is made by the county tax assessors and collectors, and many of the leases of acreage in and adjacent to fields developed in past few years find that a large saving can be accomplished by releasing acreage nearing the expiration date, and then retake same under new lease agreement later on at much cheaper rentals, due to "boom" prices on acreage having passed.

Although this tax ruling has been in effect some time, the coming year is the first time that an effort has been made to collect same by county officers, who are governed by the ruling of the Supreme Court of Texas, on June 30, 1923, in answering the certified question of the Court of Civil Appeals, of Fort Worth, in case No. 3569, Stephens County, et al, Appellants vs. Mid-Kansas Oil & Gas Company, appealed from Stephens County, Second District, wherein the Mid-Kansas Oil & Gas Company sued Stephens County and officials, to enjoin the assessment and collection of taxes on any separate right or interest of Mid-Kansas Oil & Gas Company, as the assignee of the Texas Pacific Coal & Oil Company under 109 oil and gas leases in Stephens County, held that the Mid-Kansas did acquire intertsts and estates in the lands which were subject to separate taxation.

In passing on this question the Supreme Court said: "Under our Constitution taxation is required in proportion to its value, of all property, such as the Legislature is not authorized to exempt, Sec. 1 and 2, Art. VIII. The owner is required to render and pay taxes on all lands and other property subject to taxation in the county where situated. Failure of owners to make required renditions authorizes assessments at fair values by the proper officers. Sec. 11, Art. VIII. The taxes on landed property are secured by special lien thereon, and payment may be enforced by the seizure and sale of any and all property of the delinquent owner. Sec. 15, Art. VIII. In releasing the minerals to the owners of lands previously patented, the Constitution expressly declares the minerals "subject to taxation as other property," Sec. 7, Art. IX.

Article 7509 R. S. provides that each person shall render for taxation all of his real estate, etc., Article 7504 R. S. declares: Real property, for the purpose of taxation, shall be construed to include the land itself, whether laid out in town lots or otherwise, and all the buildings, structures and improvements, or other fixtures of whatsoever kind thereon, and all the rights and privileges belonging in any wise appertaining thereto, and all mines, minerals, quarries, and fossils in and under same."

Under the ruling of the Supreme Court the tax law is retroactive, and officials of the counties, which have enjoyed leasing campaigns, are free to assess and collect back taxes on all oil and gas leases ever recorded in their respective County Clerks' offices. A movement of this kind has already been started by a number of County Clerks, and is causing considerable interest to be aroused among the operators that have been holding vast quantities of wildcat acreage in various parts of the state.

The enforcement of this tax law is going to greatly curtail leasing activity on acreage of little promising value from a production standpoint, as the rate of taxation in some of the counties makes it almost prohibitive for oil operators to pay rentals and taxation on wildcat acreage.

CONDENSED U. S. PRODUCTION

The daily average production of the fields of the United States for the past week follows:

	Barrels
Mid-Continent (Oklahoma, Kansas and North Texas	743,575
California	725,500
Texas	393,070
Oklahoma	382,075
Wyoming-Montana	145,000
Arkansas	118,745
Eastern States	109,000
Kansas	68,485
Louisiana	63,380
Total	2,003,255

(Detailed figures on page 32)

Steel a Big Factor in Field Efficiency

(Continued from page 12)

bit heats more rapidly and there should be less of a tendency to force the heating although the relatively thin edge is quite apt to become too hot. On the whole one hears less complaint about the performance of fish tail bits, perhaps because the drilling is usually much easier.

Good Performance

What is good performance for a drill bit, standard or rotary, is a question that is answered only by a guess. It is almost impossible to obtain quantitative figures from which a performance figure can be derived.

Probably the trouble of greatest concern to rotary drillers comes from twist offs of drill pipe. In this the pipe manufacturer is pushed to the limit to keep up with a strong tendency in many places to speed up the tables. However, the same thing is evident in other engineering fields. The aeroplanes and high speed cars of today would not have been possible had not the developments in metallography kept pace with the demands of high speed engines. Of course there is a limit, a safety limit, that cannot be exceeded.

It is an easy matter to go about the oil fields and find broken steel parts but it is another matter to find out how serious, what the loss of time involved by the failures is. There is no doubt that many of the parts which fail frequently can be greatly strengthened, but the strengthening often involves greater costs and the increased costs have to be justified by a commensurate saving. In order to know what the probable saving would be it would be necessary to know how much is lost through failures of the material now being used. Are there figures in the possession of the oil producer showing how much time is lost by twist off of drill pipe, by broken cable, by broken roller chain, by frequent changing of bits, etc.? Apparently figures of this kind are not available. They can be procured by a close study on a large number of wells. Of course, drilling crews generally would not welcome such a study, but conceivably some crews can be found willing to co-operate, and once the advantage of such a system of checking up on the weak spots in the drilling equipment was established, it would probably become general. Certainly it is necessary in making an improvement which is to involve an expenditure, to have a basis on which to estimate the probable saving which the improvement is going to effect.

In giving our attention to the metallographic side of the oil industry, sight should not be lost of the problem of corrosion. This problem is quite serious in fields located near the sea coast where considerable quantities of equipment are held in stock for long periods of time. It is also a problem in refinery equipment, in absorption plants and in underground pipe and casing. We find the statement made by no less an authority than Sir Robert Hatfield that during 1921 the amount of steel and iron ruined by corrosion was almost as great as the pig iron produced, though most of the metal was recoverable as scrap. It is difficult to see how figures of this kind can be obtained but the statement, whether quantitatively accurate or not, shows what a great problem the question of corrosion is.

The mechanism of corrosion is a baffling study, a metal being easily attacked by one reagent and highly resistant to another. However, a detailed investigation of each individual problem, the petroleum engineer and the steel man working together, should lead to a solution.

Iron and Steel Problems

Summing up, the petroleum industry has the following iron and steel problems before it:

1. Closer control over the kind and quality of steel entering into their equipment.

2. Improvement in the dressing and hardening of bits in the field, with particular reference to the free lance field smith and to shop equipment.

3. Determination of the loss of time and the cost involved by breakage of various parts and by frequent bit changing caused by wear.

4. The study of corrosion with particular reference to oil field and refining operations.

CRUDE AND REFINED MARKET QUOTATIONS

Crude Oil Prices

EASTERN STATES

	Dec. 15 1923	Dec. 16 1922
New York Transit	$2.60	...
Bradford (Pa.)	2.60	...
Other Pa. grades	2.35	3.00
Cabel	1.20	1.86
Ragland	.75	1.00
Corning	1.45	1.75
*Somerset, heavy	1.15	1.71
*Somerset, light	1.30	1.96

*Six cents above posted price since October 1, 1922.

CENTRAL STATES

Illinois	1.22	1.77
Indiana	1.23	1.78
North Lima	1.43	1.98
South Lima	1.43	1.98
Plymouth	.60	1.15
Princeton	1.22	1.77
Lodi	1.50	...
Waterloo	.70	1.25
Wooster	1.25	1.90
Western Kentucky	1.20	1.65

MID-CONTINENT

(Oklahoma, Kansas and North Texas)

Below 33 gravity	.75	....
33 to 39.9 gravity	1.00	...
40 gravity and above	1.25	...
(Magnolia Prices)		
Below 28 gravity	.40	...
28 to 30.9 gravity	.60	...
31 to 32.9 gravity	.75	...
33 to 39.9 gravity	1.00	...
40 gravity and above	1.25	...

NORTH CENTRAL TEXAS

Corsicana (Light) (Magnolia)	1.00	...
Corsicana (Light) (Other companies)	1.00	1.00
Corsicana (Heavy)	.40	.65
Thrall	1.00	...
Powell Field	1.00	...
Mexia	1.00	1.25
Currie	1.00	...
(Humble Oil & Refining Co.'s Prices)		
Below 30 gravity	.80	...
30 to 32.9 gravity	.90	...
33 to 35.9 gravity	1.00	...
36 to 38.9 gravity	1.15	...
39 gravity and above	1.30	...
(Texas Company's Prices)		
Below 33 gravity	.75	...
33 to 39.9 gravity	1.00	...
40 gravity and above	1.25	...

SOUTH TEXAS

Rockdale-Minerva	.85	...
Mirando	.75	...

SOMERSET

(Posted by Grayburg Refining Co.)

32 gravity and above	$1.00	...

Below 32 gravity, five cents reduction for each decrease of one half degree.

GULF COAST

All grades except Grade B at Blue Ridge and Pierce Junction	1.00	1.25
Blue Ridge (Grade B)	.90	.80
Pierce Junction (Grade B)	.90	.80

LOUISIANA-ARKANSAS

Caddo

38 and above	1.10	...
35 to 37.9 gravity	1.00	...
32 to 34.9 gravity	.90	1.10
Below 32 gravity	.75	.75

Smackover

26 gravity and above	.75	...
25 to 25.9 gravity	.60	...
24 to 24.9 gravity	.50	...
Below 24 gravity	.40	...

Homer

35 gravity and above	1.10	1.40
33 to 34.9 gravity	1.00	1.05
31 to 32.9 gravity	.90	1.10
Below 31 gravity	.75	.75

Haynesville

33 gravity and above	1.00	1.25
Below 33 gravity	.90	1.10

El Dorado

33 gravity and above	1.10	1.25
Below 33 gravity	1.00	1.10

Bull Bayou

38 gravity and above	1.05	1.15
35 to 37.9 gravity	.90	1.05
32 to 34.9 gravity	.75	1.00
De Soto Crude	1.10	1.25
Crichton	.90	1.00
Bellevue	.75	.75
Jennings	1.00	1.25
Vinton	1.00	1.25
Edgerly crude	1.00	1.25

Stephens District

(Atlantic)

28 and above	$.80	$....
26 to 27.9 gravity	.75	....
25 to 25.9 gravity	.60	....
Below 23 gravity	.40	....

WYOMING-MONTANA

Wyoming

Elk Basin	.95	1.20
Grass Creek	.95	1.20
Rock Creek	.60	.80
Lance Creek	.90	1.20
Mule Creek	.45	.60
Big Muddy	.45	.70
Salt Creek	.60	.70
Osage	.90	1.20
Hamilton Dome	.95	....
Pilot Butte	1.10	....
Landers	1.10	.37½
Torchlight-Greybull	.95	....

Montana

Sunburst	.70	.75
Cat Creek	.95	1.20

CALIFORNIA

(Crude Oil Prices at the Well)

Los Angeles and Orange Counties

14 to 19.9 gravity	.60	.60
20 to 20.9 gravity	.61	63
21 to 21.9 gravity	.62	.67
22 to 22.9 gravity	.63	.73
23 to 23.9 gravity	.64	.80
24 to 24.9 gravity	.65	.88
25 to 25.9 gravity	.66	.96
26 to 26.9 gravity	.67	1.05
27 to 27.9 gravity	.68	...
28 to 28.9 gravity	.69	...
29 to 29.9 gravity	.70	...
30 to 30.9 gravity	.71	...
31 to 31.9 gravity	.72	...
32 to 32.9 gravity	.73	...
33 to 33.9 gravity	.74	...
34 to 34.9 gravity	.75	...
35 gravity and above	.76	1.85

CANADIAN CRUDE

*Petrolia	2.08	2.38
*Oil Springs	2.15	2.45

*Plus 52½ cents bounty.

NEW PURCHASING CO.

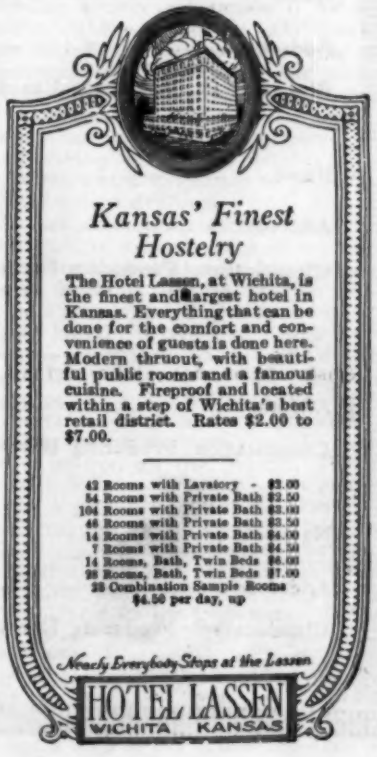
Topeka Kans., Dec. 12.—The Derby Oil Purchasing Company, crude buying subsidiary of Derby Oil Company, has been granted a charter by the Kansas state charter board. The company is capitalized at $100,000. The Johnson, Cunnings, and Love Oil and Gas Company of Independence, Kansas, also has been chartered with a capitalization of $10,000.

LECTURES ON STEEL AND PIPE

Fort Worth, Texas, Dec. 11.—An illustrated lecture on the subject of "Steel and Pipe Manufacture" was delivered here last night by A. E. Crockett, manager of the bureau of instruction for the Jones & Laughlin Steel Corporation, Pittsburgh, Pennsylvania, with a large number of employes of oil companies and supply houses in attendance. A tour of the various oil centers in the Mid-Continent and Coastal fields is being made by Crockett to familiarize the users of steel and pipe with the manufacture of these products.

LUCEY REORGANIZATION

Chattanooga, Tenn., Dec. 11.—Creditors and stockholders protective committees of the Lucey Manufacturing Corporation have worked out tentative plan of reorganization by which it is believed receiverships of parent and subsidiary companies will be lifted shortly. The agreement has been approved by the federal court in Tennessee and similar action is expected in Texas.


Kansas' Finest Hostelry
The Hotel Lassen, at Wichita, is the finest and largest hotel in Kansas. Everything that can be done for the comfort and convenience of guests is done here. Modern thruout, with beautiful public rooms and a famous cuisine. Fireproof and located within a step of Wichita's best retail district. Rates $2.00 to $7.00.
42 Rooms with Lavatory - $2.00
54 Rooms with Private Bath $2.50
104 Rooms with Private Bath $3.00
46 Rooms with Private Bath $3.50
14 Rooms with Private Bath $4.00
7 Rooms with Private Bath $4.50
14 Rooms, Bath, Twin Beds $6.00
28 Rooms, Bath, Twin Beds $7.00
28 Combination Sample Rooms
$4.50 per day, up
Nearly Everybody Stops at the Lassen
HOTEL LASSEN
WICHITA KANSAS

A Producer Writes—

"Send The OIL WEEKLY to the following for one year as a Christmas Present, etc"—

What better present can you make your friends in the oil business than a year's subscription to The OIL WEEKLY? It is a gift that will put in its appearance, and remind your friend of your thoughtfulness, every week for a whole year, and at a cost of ONLY $1.00.

We will write your friends that The OIL WEEKLY is being sent for a year with your compliments.

USE THE BLANK—NOW

The OIL WEEKLY

P. O. Box 1307, Houston, Texas.

Gentlemen:

Please send The OIL WEEKLY for one year to the following:

Name.....

Address.....

Classification: Producing Executive ☐ Field Man ☐ Pipe Line ☐

Name.....

Address.....

Classification: Producing Executive ☐ Field Man ☐ Pipe Line ☐

Name.....

Address.....

Classification: Producing Executive ☐ Field Man ☐ Pipe Line ☐

Name.....

Address.....

Classification: Producing Executive ☐ Field Man ☐ Pipe Line ☐

Electrical Power for Drilling and Pumping

Motors now being used extensively—Prove more economical in many producing sections

By W. G. Taylor

TO AN engineer who has observed changes in operating conditions and practice in the oil fields, particularly in recent years, it is gratifying to see the decided tendency toward improvement in efficiency of apparatus and in economy of operation. This is particularly noticeable among the larger companies, but many of the smaller ones are not slow in taking advantage of such improvements. Electric power is playing a large part of this, both directly and indirectly, and on every side the evidence of its superiority is strong and convincing.

General Use

In the oil fields having it available, electric power is used extensively to drive water pumps, gathering and line pumps, vacuum pumps, compressors for natural gasoline plants and circulating pumps in these plants. No less important are electric dehydrators, arc welding equipments for pipe line and tank construction, motor drive for machine shops, and general lighting about the fields. The greatest as well as the most important use of electric power, however, is in drilling the wells and in maintaining them as producers by pumping, pulling and cleaning them.

Drilling Equipment

Although much has been written and published about oil well motors, it may be explained somewhat briefly that different motors are used for drilling than for pumping. The larger motor used for drilling would not be nearly so economical in power consumption on pumping if it were used in place of the motor designed particularly for that work.

The drilling motor, usually seventy-five horse power in capacity, is used for either cable-tool or rotary work, and is supplied with control apparatus which not only gives the fine speed adjustment necessary in cable-tool drilling, but also gives the right motion of the tools required for effective drilling. As the ability of electric drive to do this successfully is usually questioned by field men upon their first consideration of the adoption of motors, it is interesting to note the statement of an old steam driller in Kansas who used electric power for the first time in drilling wells for the Empire Gas and Fuel Company. He said: "It was possible to control the drop of the tools to such an exact degree, that if a driller were brought into the rig blindfolded and asked what power was used, he would say 'Steam,' for the kick on the line is identical." It may be added that that company abandoned steam drilling in the El Dorado, Kansas, field several years ago.

The control apparatus for a drilling motor also gives all the speed control needed at light loads to handle such work as spudding-in, fishing pipe, and in general closely duplicates or improves upon the results obtained with steam. Two rope wheels on the headache post at the derrick give the driller complete control of the motor.

The same drilling motor equipment used for cable-tools is suitable without change for the main drive on a rotary rig, the only difference in the set-up being that the motor instead of being belted through a counter-shaft to the bandwheel, is coupled to a gear reduction unit which drives the draw-works by standard rotary chain. Separate motors are provided for the slush pumps. It has until recently been the practice to use one motor for the two pumps, shifting from one to the other as required, but the better plan now being adopted is to provide a separate motor for each pump, thus making them entirely independent of each other.

During recent months much consideration has been given to problems of power in the fields, and some interesting comparisons have been made as a result of the various investigations. Electricity, which for a long time was neglected in oil field operation, is now gaining much favor in some of the larger producing sections of the country.

The accompanying article was read before the Group Session on Standardization of Oil Drilling Methods, Wednesday afternoon, December 12, at the Fourth Annual meeting of the American Petroleum Institute, St. Louis.—The Editor.

Equipment for Gassy Fields

There are comparatively few locations where the danger of ignition of gas around the rig is sufficient to warrant special protection on the electrical equipment. Thousands of installations of motor equipments without such protection have been operating successfully for years, but there are unquestionably many wells on leases not yet electrified where protection is advisable on account of the particularly bad gas conditions. To provide such protection, the controller and switches are immersed in oil and the slip-rings of the motor suitably enclosed. The entire motor has been enclosed in some instances, a number of such outfits having been built for the Baku field of Russia.

It will no doubt be of interest to many that it is not feasible to build the motor frames or the enclosure for the rings gas-tight, but the construction is designed to withstand any explosion of gas inside and to cool off the gases developed by the explosion, as they seep out, so they will be below the ignition temperature of the gas outside. This is accomplished by using wide and heavy flanges on all joints and making them an ordinary machined fit. This type of construction has been determined as the best for the purpose, not only by the Germans and the English but also by the United States Bureau of Mines in their experimental laboratory at Pittsburgh, as the result of many tests of various types.

Cost of Electric Power

In comparing the costs of drilling by various forms of power, it is necessary to eliminate all items not influenced by the power used, in order to avoid introducing factors which vary widely with the underground conditions and with the luck encountered. A comparison of this kind was recently made by the Pinal Dome Corporation operating in California and Texas. Three wells were considered, one drilled by electric power to a depth of 5108 feet, another by gasoline engine to a depth of 5208 feet, and the third by steam engine to a depth of 3955 feet. The loss of time due to shut-downs of the motor was 121 hours, gasoline engine 202 hours, and steam engine, including boiler, 328 hours. This indicates a material advantage of motor operation. The average cost of power per foot drilled was 82.1 cents for electric power, 85.5 cents for gasoline, and $2.49 for steam. This comparison is not a proper one, however, as the amount of power required per foot drilled will vary with the formations encountered, and so is not as true an indication of relative cost as the average cost of power per operating hour. This was as follows:

Motor . . . . . 40.7c per hour
Gasoline engine . . . . . 8.3c per hour
Steam engine . . . . . 93.8c per hour

These figures speak for themselves and are further substantiated by records of other companies. The Empire Gas and Fuel Company, for example, compared the cost of electric power for drilling a 240 foot well in Kansas with the average cost of steam drilling on similar wells, and determined the total saving in cost of power to be $1,585.00, which amounted to $46.62 per day of actual drilling.

Rotary drilling by electric power in California is proving very economical, and some figures obtained on two different wells are good examples. The Nevada Ventura Oil Syndicate in the Signal Hill Field at Long Beach operated an electrically driven rotary rig for 31 days in January, 1922, with a 75 horse power motor on the draw-works and rotary table, a 50 horse power motor on the slush pumps, a ½ horse power motor on the blower, 5 kilowatts in lights and three electric ranges on the lease. The power bill was $501, an average of $16.16 per day. A steam driven rig, operating across the road from this well and burning oil under the boiler, averaged $92.00 per day for oil fuel and boiler feed water during the same month. Both rigs ran throughout the month without delays and made about the same amount of hole per day.

The San Martinez Oil Company drilled a well to the producing sand in

38 days, using an electrically driven rotary rig. A nearby well of another company was started on the same day and drilled by steam power, and the crews of the two rigs had a race with each other. Both wells had the casing set at the top of the sand the same day, 38 days after starting, both were cemented at the same time and both reached production at the same date. The race was particularly interesting because, at the outset, the electrically drilled well got behind, the crew drilling with steam making hole faster at the start. Toward the end, as the crew on the electric rig became more proficient, they gained rapidly on the steam rig and completed the well on the same day at approximately the same depth. During the entire performance there was not a single accident of consequence on the San Martinez well, but on the steam drilled well there were a number of twistoffs and expensive accidents. The power cost on the electrically drilled well averaged $15.81 per day,while the steam rig cost about $100 per day for power.

The cost including installation of the electric and steam equipment at the two wells was practically the same, but the salvage value of the electric equipment at the completion of the well was estimated at about 90 per cent of first cost, while the steam equipment was worth considerably less.

Operation

Let us now consider the operation of producing wells. It is only by having the lowest cost of operation and by the most reliable and convenient medium that any form of power can lay claim to superiority for this work. It has become quite generally recognized that steam power is far from the best in this respect, and the question has narrowed down to the gas engine and the electric motor.

A true comparison involves many factors, the value of which can best be determined by the actual experience of operating companies. Fortunately for the producer who wishes to know the facts, the use of oil well pumping motors has grown to such an extent in this country that practically complete operating data for a great variety of conditions are readily available. A discussion of gas engines versus motors for oil well pumping was given in an article* which recently appeared in one of the leading oil trade papers, but many of the comparisons made do not accord with facts as gathered from numerous sources of unquestionable reliability. It is therefore proposed to point out these discrepancies.

Gas Engines vs. Motor

The mere fact that gas is available on a lease does not make the gas engine the logical or the most successful type of power equipment for pumping the wells. The cost of operation is usually the determining factor, reinforced by whatever additional advantages the equipment under consideration may have.

Some of these additional matters for thought are safety, reliability, convenience, and speed regulation.

That safety is necessary need not be dwelt upon, and mention has already been made of the use of electric equipment at gassy wells. The claim that has been made, that electric equipment has caused many serious and costly explosions, is unsupported by the records. If this claim were true, the thousands of motors which have been installed and the scores going in today would never have been purchased by the oil companies. No company would risk the large investment at every well for the difference of a comparatively few dollars in first cost and operating cost of the power equipment.

Another fallacy is the danger from crossed wires. The standard modern methods of insulation and wiring give full protection from any such possibility, and only ignorance of these facts would lead one to believe otherwise.

On the other hand, the gas engine is not free from danger. Fires due to the clutch are known to have occurred, while men have been seriously injured and even killed by getting tangled up in the flywheel in the endeavor to start it. The Empire Gas and Fuel Company has found that fully a third of its accidents to employees was due to this cause alone.

Reliability

Reliability in service is measured by the time lost due to interruption rather than by the number of interruptions occuring. Any oil operator can check the service given by the power company in this respect and will find that it is a rare case for the power to be off every three or four days as has been claimed. It is not unusual for the power to be on continuously for five or six months at a time. There may of course be frequent interruptions during a storm, but the power supply is not affected by cold weather, which as is well known, seriously impairs the gas supply and causes delays from freezing of water lines. The Empire Gas and Fuel Company found that from 4½ to 8 per cent of the available pumping time was lost because of gas engine troubles, while with electric drive the loss was only from less than one per cent to about two per cent. Combining this with similar data obtained from several California operators, the average is about seven per cent for gas engines and three per cent for motors. Allowing for the accumulation of a head on the well which results in greater production for a time after a shut-down, the lost production on a 40 barrel well averages about 42 barrels per month with gas engine drive and 18 barrels per month with motor drive. The difference is no small item.

Convenience

Considering convenience, it is yet to be demonstrated that a gas engine is more flexible in control than an oil well motor, or that pulling and cleaning the well can be done more quickly with it. Every operator who has used electric power will testify to the fact that with a motor, time is gained by the ability to "spot" stands or rods and tubing more quickly. On heavy loads the motor holds up its speed as well or better than the engine. The engine is controlled by a throttle wheel and a clutch lever, while a single wheel gives complete control of the motor.

Speed regulation of the engine or motor affects the amount of production and of rod breakage. The amount of production varies with the number of strokes per minute, and consequently with the speed of the engine or motor. The latter is affected by changes in load and by variations in the power supply. As compared with the irregularity of the usual oil field gas supply due to changes in the underground conditions as well as in the weather, electric power is notably free from such disturbances, resulting nearly always in a higher average motor speed and thus in more production. No pumper can be expected to check the speed on every well as often as would be necessary to compensate for the changes which occur in the average engine speed.

Many records can be produced to prove that rod trouble is less with motors than with engines. It is not the range in speed but its rate of change on every pumping stroke that does the harm. An average engine, selected at random in Southern California, operated normally at eight explosions per minute. The governor operated at 110 r. p. m. and the resulting explosion literally kicked the speed up to 150 r. p. m. in a very small fraction of the total time of seven and one-half seconds between explosions. Occasionally some irregularity developed, the speed would drop to 100 r. p. m. and the two explosions then following would run the speed up to 160. This rapid acceleration due to the explosions is the source for much rod trouble which cannot be explained by the use of war material, as it was known even before the war began. On the other hand, the motor speed is inherently constant and varies smoothly and gradually up and down as the load changes on each stroke. The speed is only slightly affected by changes in voltage, while the frequency of the power supply, on which the motor speed depends, is always practically constant.

Comparative Pumping Costs

Further consideration of the gas engine and the electric motor for oil well pumping resolves into the question of costs of operation.

For ready comparison, data on fixed and operating charges which are submitted herewith are based on a lease with twenty-five units, the same as in the article to which reference has already been made. This will bring out the fact that in that article assumptions have been made which are unwarranted and figures have been given as averages which are not substantiated by actual records available. In preparing this tabulation, the data which has been used has been obtained from the various oil operators who have kept records. It has been necessary to coordinate the results of several companies, as no one company had the data complete with all items segregated, but this in no way alters the value of the data.

First Cost per Unit—25 Units

30 h. p. engine installed ready to run	$2,400
30/15 h. p. motor installed ready to run, including transformers and primary lines	2,200

Annual Fixed Charges per Unit—25 Units

	Gas Engine	Motor
Interest on investment at 6%	$144	$132
Depreciation, engines 10%, motors 5%	240	110

*"Gas Engines and the Pumping Problem" by J. M. Davis, in The OIL WEEKLY, March 31, 1923, page 14.

Maintenance, engines 5%, motors 2%	120	44
Belt maintenance, engines 20.5c, motors 10c per day	74.83	36.50
Insurance and taxes	48	44
Total fixed charges per unit per year	$626.83	$366.50

Annual Operating Costs per Unit—25	Gas Engine	Units Motor
Engine lubricating oil gal. @ 38c	$ 68.40	....
Motor and Countershaft lubricating oil waste and cleaning	....	$9.60
9 pumpers, 3 per shift @ $5.25 per day	689.85	....
6 pumpers, 2 per shift @ $5.25 per day	....	459.90
1 gas engine man @ $6.75 per day	97.20	....
1 gas engine helper @ $5.50 per day	79.20	....
1 electrician hired from electrical contractor at $10 per day half time required	....	72.00
Power, 6.76 kw. input for 24 hrs., 365 days, or 59,217 kw. hrs. @ 1c	....	592.17
Operating cost per unit per year	934.65	1,133.67
Fixed charge per unit per year	626.83	366.50
Total cost per unit per year	1,561.8	1,500.17

This comparison serves to show that under these conditions motors are more economical than gas engines, even without including any charge for gas or water for the engines, without taking into account of the greater percentage of time lost from shut-downdowns of the engines and capitalizing the decreased number of pulling jobs due to reduction of rod trouble when motors are used. Furthermore, as will presently be shown, the power consumption assumed represents the heaviest set of pumping conditions in the country, considering the wells as a group, and it would be much fairer to the motor to use a lower figure representing more nearly average conditions.

We will now consider in detail the items making up this comparison of costs.

First Cost

The cost of the gas engine installed and ready to run has been based on the figures given in the Summary of Operations, California Oil Fields, October, 1922, Vol. 8, No. 4, Page 8, issued by the California State Mining Bureau. The cost of $2,514.75 given there has been reduced to $2400 to allow for subsequent changes in prices. That this figure is reliable may be judged by the fact that it was obtained in an unbiased investigation made by the State Mining Bureau.

The cost of the motor installation is the average of many available records and covers the use of a belted countershaft rather than reduction gears, as this is the more usual type of installation. The figure includes setting the motor and countershaft on concrete piers, using an endless motor belt, lengthening the engine house for motor operation, and putting in the wiring in a first class manner. The pro rata cost of transformers, metering station and power distribution lines is included on 500 feet well spacing. Freight and haulage charges and cost of a counterweight on the walking-beam are included.

If the oil company did not supply its own transformers and primary lines, the first cost would be from $1,750 to $1,800 per motor, but the power cost would be determined by a different schedule giving a higher power rate, as will be explained later.

Depreciation—Maintenance

There is sometimes a difference of opinion as to the proper way to charge depreciation, and some companies arbitrarily depreciate all apparatus at the same fixed rate, but this is obviously incorrect. Considering the known useful life of the apparatus, the percentages used are certainly none too high.

It is a matter of common knowledge that a new gas engine will operate for the first three or four years with very little trouble, but after that repair expense increases rapidly. That a five per cent charge distributed over the life of the engine is conservative, is verified by the records of a large California oil company covering 75 gas engines over a five year period, and showing an average shop cost of labor and material for repairs of 50 cents per engine per day. The Empire Gas and Fuel Company in Kansas in a report published in 1922* gave this cost as $24.14 per engine per month, which was the average for 367 engines for five months.

It will be noted that the total combined depreciation and maintenance charge for the gas engine is 15 per cent, as against 10 per cent claimed in the article already mentioned. We are yet to find the first operator who has kept records who will make such a conservative estimate.

*"Electricity Saves Expense in Oil Fields," Electrical World, October 28, 1922, Vol. 80, No. 18, page 942.

Three in One

Here's where an oil company has joined producing, refining and marketing in a very simple manner all right around one well. The well belongs to Western State Oil and Land Company, and is in the Deer Creek field of Oklahoma. Drilling started for crude, but a strong wet gas flow was encountered and in the end the well was making a fairly large amount of raw natural gasoline. It is still making this gasoline. The company capitalized on its unexpected development, erected tanks and is selling the gasoline to farmers in the vicinity at the well.

In the report of the Empire Gas and Fuel Company just mentioned, the maintenance charge against 241 electric motors was given as $4.64 per motor per month. This is sufficient justification for assuming a charge of two per cent for maintenance.

In this connection just a word or two may be said about the claim, to which exception is here taken, that electric control devices or equipment in general are more delicate or require the services of an expert to any greater extent than gas engine equipment. To be quite impartial, anyone qualified to judge must not overlook the trouble with the magneto on the engine and the necessity which sometimes occurs of calling for an expert to diagnose starting troubles.

This is an important item not always considered. The average daily costs used are taken from the records of a large California oil company and cover 34 motor and 75 gas engine installations over a period of five years, which makes them sufficiently conclusive.

Lubricating Oil and Waste

The cost of lubricating oil for the gas engine is given on authority of the Western Machinery Company of Los Angeles, as gas engine manufacturer. The cost of waste for the gas engine has not been included, although it is an item of expense.

The cost for the motor installation includes oil, waste and cleaning, as these items were not segregated in the records of the General Petroleum Corporation of California, from which they were taken. This is an actual cost for a large number of motors which that company has in service.

Labor and Attendance

For the gas engine, the figures are given on the authority of a gas engine manufacturer, and check closely with actual records. The charges indicate that the engines require considerable care, and contradict the claim that progress in gas engine construction has in recent years reduced operating costs. Further contradiction is found in the available records of the costs of necessary maintenance and supplies, such as lubricating oil and waste.

Records of operating companies do not show that as many pumpers are necessary for electric as for gas engine operation. While it is true that the pumper's duties include care of the rig as well as of the power equipment, he spends a larger part of his time on the engine than on the motor. Every oil company which has used both forms of power knows that. In a great many cases 25 motors would be taken care of by a single pumper, and in any case two men per tour would have a very easy time of it. As an extreme case, the Associated Oil Company in the Kern River field of California, with 215 individual motor-driven wells, 30 jack plants and numerous auxiliary pumps, require only three pumpers per tour. They are provided with Ford cars and the system has been in satisfactory operation for quite a while. Only motor operation makes this possible.

As regards labor for maintenance of electrical equipments, let us consider briefly what several oil companies are doing.

(1) The Associated Oil Company, on the lease just mentioned, has one man

Now put on couplings that will hold — why risk another fishing job?

Drillers are paid to drill—not to **fish.** But your choice of couplings determines how much of their time is spent on the former or wasted on the latter.

Everything that keeps you from hitting the pay sand, once drilling is started, boosts your costs and lowers your profits. And if you know of any form of interruption more frequent or more costly than that caused by couplings which weaken, gall, strip, develop leaks and break in bucking on, we would like to know it.

Oil men who carefully consider how much couplings help or **hinder** the drill crew place their reliance on Harrisburg's "double-strength" endurance.

There is no weld—no weakness—in Harrisburg Couplings of forged seamless steel. No galling or stripping. No breaking in bucking on—no piping to develop leaks. And the special oil field steel which gives Harrisburg Couplings double strength is always uniform.

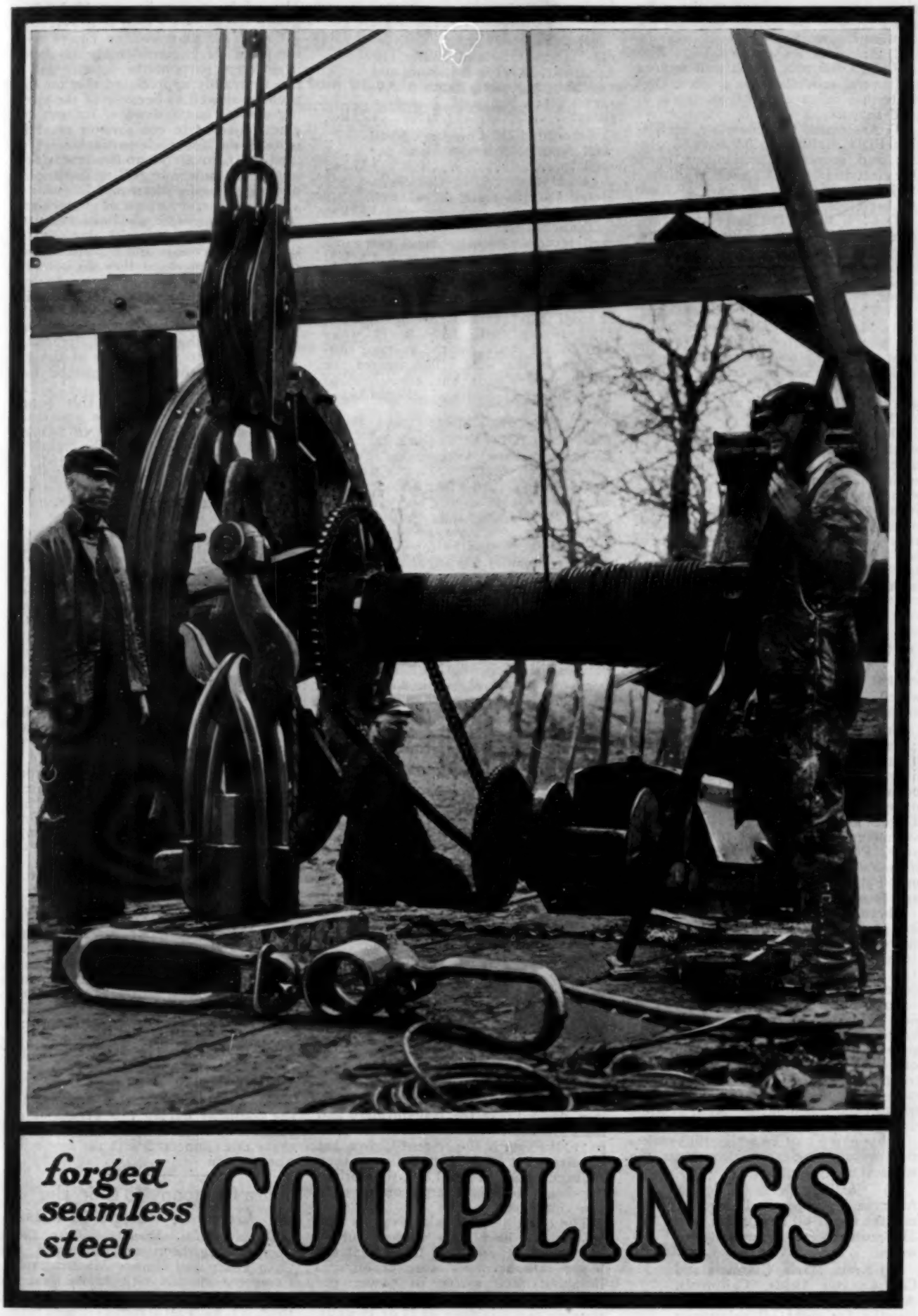
Take precautions instead of chances. Insist on Harrisburg Forged Seamless Steel Couplings, Bull Plugs, Swedged Nipples, Pump Liners and Drill Collar Forgings.

Manufactured by

HARRISBURG
PIPE & PIPE BENDING CO.
Harrisburg, Pa.

Stocked and sold by leading supply houses.

HARRISBURG



Say you saw it in The Oil Weekly

for maintenance, assisted at times by four men who are mostly engaged on construction work.

(2) Arizona Oil Company, Kern River Field, California, 53 oil well motors and several miscellaneous motors. One electrician takes care of all work in good shape.

(3) Associated Oil Company, McKittrick Field, California, 32 oil well motors and several miscellaneous ones. One electrician does all work, with time for house-wiring and for care of lease at Lost Hills, 40 miles away.

(4) C. J. Berry Oil Interests, Maricopa and McKittrick Fields, California. Sixty-five pumping motors and three drilling motors now installed and more coming in. One electrician and one helper.

(5) The Shell Company of California, Santa Maria Field, California. Seventy-five pumping motors, four absorption plant motors, four water pumping station motors and two drilling motors. One electrician and helper care for all and do all electrical and telephone work on the lease.

These instances show that no one would be warranted in charging the full time of an electrician and helper against 25 motors. An oil company with no more than this would probably, as many are now doing, engage an electrical contractor to do their maintenance work. It would take less than half of one man's time, at an estimated rate of $10 per day, including the contractor's profit.

Consumption and Rates

It is assumed that gas for the engines can be obtained from the lease without cost. Often, however, the gas has a market value or must be purchased, in which case the cost must be charged against the engine.

Similarly no charge is made for circulating water, although in many cases it must be purchased or pumped at considerable expense. Thirty-six dollars per engine per year is a fair figure for many California fields. It costs the Empire Gas and Fuel Company in Kansas an average of $108 per engine per year. For 10 engines at Maricopa, California, it averages $42.48, and the General Petroleum Corporation some time ago found their average was $15.

There is no justification for assuming in a comparison of this kind that the electric power input to the motor at each well will average as high as 11.9 kw. or even 8.5 kw., as has been done in the article already referred to several times. Correct conclusions cannot be drawn unless such figures are based on actual field conditions rather than selected arbitrarily. Examinations of power companies' ledgers and of oil companies' monthly bills have been made and the following records obtained of actual input per well, in some cases including the power consumption of other pump motors which thus makes the average appear higher than the wells actually require.

(1) Coalinga field, California, Average input per well for five months for 11 oil companies with 23 motors on representative wells . . . . . 3.63 kw

(2) Santa Maria, Casmalia and Cat Canyon fields, California. Average input per well for five months for eight oil companies having 63 motors on representative wells . . . . . 6.76 kw.

(3) McKittrick field, California. The Berry and Keller Oil Company, 18 oil well motors and two shipping pump motors. Average input per well, including pumps . . . . . 4.22 kw.

Associated Oil Company, 32 oil well motors. Average input per well . . . . . 3.33 kw.

(4) Maricopa field California. Berry Oil Interests, 40 oil well motors. Average input per well 3.25 kw.

Tannehill Oil Company, 10 oil well motors. Average input per well . . . . . 3.33 k.w

(5) Elk Hills field, California. Standard Oil Company, 6 oil well motors. Input per well determiner from instantaneous readings 8.15 kw.

These are particularly heavy wells and do not represent the average conditions in the field. The figures are not true averages but are given to show an extreme case of selected heavy wells.

(6) Kern River field, California. Associated Oil Company, 215 oil well motors. Average input per motor . . . . . 3.60 kw.

This includes a number of jack plants which cannot be readily segregated.

(7) El Dorado and Augusta fields, Kansas. Average input per well for 2 months for about 25 oil companies having 81 average wells . . . . . 4.58 kw.

(8) Gulf Coast fields, Texas. From records of the Gulf Production Company, the Humble Oil and Refining Company, and others, the average input for the various fields where a large number of motors are installed is . . . . . 5.20 to 6.00 kw.

These power consumption records include all power used at the well not only for pumping, but also for pulling, bailing and cleaning, and include losses in transformers and lines owned by the consumer. The average is determined by assuming that the motors operated continuously. It will be appreciated that in selecting the high input of the Santa Maria, Casmalia and Cat Canyon fields as the basis for the conparison which has been made, the motor has been heavily penalized. A more nearly correct average input would be about 4.75 kw., judging from the figures given in the foregoing examples.

The power rate used is the substation rate of the San Joaquin Light and Power Corporation in California, this being applied to any consumer who supplies all his transformers and necessary lines. The power company meters the input at one or more locations. This rate is not determined by the amount of power used, and an oil company with only one well could obtain it if desired. If the transformers and lines are not furnished by the oil company, the rate is 40 per cent higher, but the first cost of the installation is then reduced to $1,750 or $1,800, thus bringing down the fixed charges on the electric equipment.

The question as to which rate is best to use can be readily worked out by any company, and it is found that the lower rate becomes more economical if about $600 worth of power per month is used. This corresponds roughly to a minimum of 14 or 15 wells. The minimum number would be less where the pumping load is heavy.

Power rates as well as power consumption vary considerably in fields in different parts of the country and it can be readily appreciated that on this account as well as because of the varying cost of gas and water for gas engines, a separate comparison must be worked out for each particular set of conditions, to arrive at the true worth of electric power for oil well pumping operations under those conditions.

For a fair comparison of engines and motors it is unsafe and misleading to cite bad examples which are due to lack of proper care and attention or to poor management, as they do not represent the normal condition which a stable oil company will strive to maintain for the purpose of obtaining the maximum return to its stockholders. Neglect and abuse of the equipment is just as fatal to the success of the gas engine as to that of the electric motor.

In the preparation of this paper, much credit is due to the assistance rendered by C. F. Forsberg, of Bakersfield, California, who has supplied a great deal of data accumulated by pains-taking effort over a period of several years.

Pipe Line Precedes Drilling in Sumatra

Washington, D. C., Dec. 10.—The laying of a pipe line before any oil was produced is a feature of the development work in new anticlines in the Djambi petroleum fields in Sumatra, according to a report to the petroleum division of the Department of Commerce from the American consul at Batavia.

No oil has yet been found on either the Banjoebang or the Betoeng anticlines, the consul reports, and the work of drilling has been seriously delayed by accidents, earth slips and hard rock. The pipe line connects with the main line to the refinery at Pladjoe, and pumping stations and telephone lines have also been installed, together with a number of tanks.

Invincible Corporation Has Phenomenal Growth

Shreveport, La., Dec. 5.—The growth of the Invincible Oil Corporation from a small organization with $50,000 capitalization, to a $12,000,000 concern in a period of slightly more than ten years, was celebrated here with a banquet last Friday night. The event was, in a way, a farewell function to E. R. Ratcliff, retiring president, as well as a welcoming one to the new president, Richard B. Kahle.

Mr. Ratcliff has directed the affairs of the company during this period of expansion and has merited the esteem of every one connected with the Invincible Corporation.

Tulsa Company to Ship Big Order of Pumps to Russia

Tulsa, Okla., Dec. 1.—Four Gaso pumps have been ordered from the Gaso Pump and Burner Manufacturing Company of this city to be sent to Karachi, Russia. The shipment goes to A. O. G. Fatchjang.

Drilling Costs Cut by Lighter Equipment

"Hole at a dollar a foot" possible with machines using gas engines and tractors

By Grady Triplett

FOR prospecting and developing purposes in the Coastal districts, small drilling machines, driven by gasoline and kerosene engines, are now being introduced. In some instances, such machines are used to find structures, while in other cases these machines have been found economical and effective for defining the extent of the cap rock, after the dome has been found, as well as for drilling oil producers in shallow sections.

This type of machine was first used for drilling water wells, and has been adapted to that kind of drilling in various sections of the Mid-Continent, Texas, Louisiana, Arkansas and California.

The two items in favor of the lighter machines for oil prospecting purposes are its economy in operation and the quickness with which they can be set running. Instances are on record where holes have been drilled for less than $1 a foot, using this type of portable equipment and drilling only small holes. Even where a wooden derrick had to be skidded, the Texas Exploration company found it possible to move from one hole and get started on another within three days, and another rig drilled a 1500 foot hole in 11 days, drilling only in daytime.

Aside from the special machines built for prospecting purposes, the rigging of farm tractors for power to large rotaries is common in the Coastal fields. Such outfits have been used both for prospecting, and in a few instances for drilling in proven fields. Light tractors and small rotaries are used for prospecting. Where drilling is done for completing an oil well, heavy tractors, with the usual size of rotaries used with steam rigs are in vogue.

Can Go 3,000 Feet

The small rigs are generally equipped to go as deep as 2,000 feet. In most instances, however, it is not necessary to go this deep, as cap rock is found at a shallower depth. However, it is possible to drill as deep as 3,000 feet, with either the tractor driven rotary or one driven by a special machine, equipped for quick moving.

Cores can be taken with these small machines just as they are taken with ordinary rotary drilling. Often only a 2-inch core is possible and in no case is it possible to get a core larger than 3 inches, when using the types of portable drilling machines now being utilized in the Coastal fields.

One Type

One of these portable rigs was built by the Texas Exploration Company and used for defining the limits of the Hockley Salt Dome on the Texas coast. This outfit consisted of engine, pump and draw works mounted on a heavy oil field wagon, a 14-inch rotary rig, and a wooden derrick 64 feet high. The engine used is a single stage, horizontal type of 15 horsepower, heavy duty. The engine has one speed with no reverse.

The pump is 6x4, power driven by gears. Power for the pump is taken from the same engine that runs the rotary.

The draw works has a small drum with double brakes and two speeds.

This equipment with a 14-inch rotary was built to drill not deeper than 2,000 feet and for prospecting purposes only. Drill stem of two and a half or three inch size was used and in some instances it was found that two inch upset tubing would serve for drill stem.

Since this rig was built for duty in one locality, a wooden derrick 64 feet high was furnished. Five holes were drilled with the machine and one derrick. It was found that the rig could be skidded from an old location and drilling on a new hole begun within three days. With this machine the cost of the five small holes was no greater than one hole would have cost had the ordinary steam rig been set up.

Cores were taken at any desired depth, the method being identical with any other type of rotary drilling.

When drilling rock as much speed was made with this small outfit as is commonly made with larger rotaries. In one well 135 feet of rock was drilled with the usual rock bits of small size being used.

Used to Test Men

Only three men comprise the drilling crew for the rig. The experience of this company has been that the portable rig, using internal combustion engine power, afford opportunity to test men, who are ambitious to become drillers with steam rigs. In one instance a man, who had served several years as a roughneck, was placed in charge of the gasoline rig. His record with it was such that the company is now providing him a place as a driller with a steam rig.

The Texas Exploration Company is not now using the machine that defined one side of the cap rock at Hockley. But it will keep the rig for use when other prospecting is necessary. Officials of the company say such a rig, at a drilling cost of about $2,000, will give as much information from prospecting work, as a large rig and that the cost will not be one-third that of the larger rig.

Texas Special

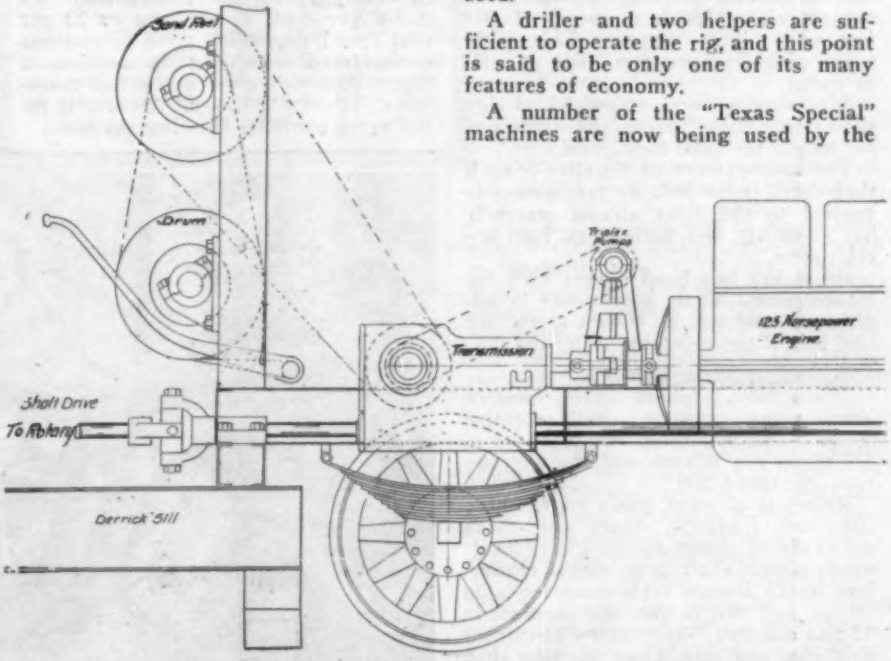
Another such portagle rig has recently been manufactured by the Oil Well Service Company, of Houston, Texas. The "Texas Special" size is built to drill wells to an approximate depth of 2,500 feet. It consists of a sturdy heart timber frame set on wide steel wheels equipped with a tongue for hauling. This frame forms a permanent base for a 15 H. P. Gasoline engine, a 4x6 Gardner belt driven pump with bolted cast iron liners and a loose and tight pulley, cone clutch, drum, drum shaft, and a line shaft with one cat head. The jack posts are securely bolted to the wagon frame.

The wagon is backed up to the derrick. The jack posts are bolted to the head boards on the derrick and the rotary is connected to the sprocket shown in the cut.

This outfit does not include a rotary; any size or style of rotary can be used.

A driller and two helpers are sufficient to operate the rig, and this point is said to be only one of its many features of economy.

A number of the "Texas Special" machines are now being used by the



Machine built to be used by the Pennormil Oil Company for prospecting along the Reynosa Escarpment in South Texas

The "Texas Special" Portable rig made by the Oil Well Service Company and used by a number of the larger companies for testing prospective oil areas

larger companies in the coastal section.

Three Speeds

The rig shown in figure 2 is being used by the Pennormill Oil Company for prospecting along the Reynosa Escarpment in South Texas for drilling holes down to 3000 feet and for setting 3000 feet of six and five-eighths inch casing.

This rig is equipped with a 125 horsepower four cylinder engine and a heavy transmission mounted on a chassis along the center line. Line shaft passes through transmission as shown on drawing and drum is chain driven.

This arrangement gives three hoisting speeds with the same engine speed and one reverse speed. The lifting capacity with five lines is 30,000 pounds at 100 feet per minute; 75,000 pounds at 40 and 150,000 at 20 feet per minute; that is, the power unit has this capacity. The maximum hoisting speed gives the travelling block a speed of 300 feet per minute empty. This wide range gives extreme flexibility as well as speed.

A comparison with steam driven rigs shows that these speeds and capacities are ample for 3,000 foot holes.

The arrangement of clutches is such that there is no jerk or jar; power is applied to the lines almost instantly but smoothly and with quick load acceleration.

Drum has two band brakes each six inches wide. Draw works has in addition a sand reel as shown to receive 3300 feet of three-eighths inch sand line.

Shaft Driven

The rotary is shaft driven directly from engine, enabling high rotative speed. The maximum rotary speed is 325 turns per minute and the average running speed 200.

Rotary is all steel; gears are machine cut from forgings; cones and races are of nickel chromium steel, case hardened; pinion shaft is of nickel chromium steel. Rotary table diameter is 32 inches and the largest bit through is 12 and one-half. The rotary screws up drill pipe and casing and has ring slips for three-inch, four-inch, six-inch and six and five-eighths-inch. Drive bushing is fitted to the table and holes for grip ring posts are provided. Weight of rotary is 1050 pounds.

Pumps are of the triplex express type for high speed. Suction valve areas are very large; air chambers for suction and discharge are provided and these features allow valves to close quietly and the pump to furnish a steady stream without pulsation. This design of pump is uniflow, the fluid travelling in one direction with no angular turns and, clearance space being reduced to a low figure in this design, pump delivery approaches theoretical delivery very closely.

Pump rods are case hardened and pistons are packed with rubber. Liners are of steel tubing, case hardened, and are removable. Weight of one pump is 275 pounds.

The arrangement shown gives variable pump speed; that is, with a given rotary speed, the pumps may run at 100 per cent, 40 per cent or 20 per cent speed, depending upon formations encountered. Drilling in gumbo, a pump does not slow down but maintains the same delivery. Automatic relief valve prevents bursting the hose.

The draw works is mounted with the engine on a channel frame which in turn is mounted on a regular four ton capacity dead axle with double solid tires, spring suspension and Timkin bearings. Front end of chassis is made trailer fashion and the rig is transported by placing the front end upon a truck or oil field wagon, depending upon road conditions.

Weight 4250 Pounds

The total chassis load of engine, rig and pumps is 4,250 pounds; the rotary being a separate load.

The rig is furnished with a double barrel core drill so arranged that the barrel can be withdrawn from the hole through the drill stem. With three-inch upset drill pipe, a one and seven-eighths inch core can ce taken and, with a core drill of this type, a core barrel 20 feet long can be removed and replaced in a 1500 foot hole in 11 minutes.

The users of this type of rig are prospecting, taking core the entire depth of well and are having the cores classified into the various geological horizons, resulting in a geological column instead of a log of gumbo and boulders.

Fuel used is kerosene or any distillate above 40 Be. gravity or natural gas. The engine starts on gasoline and runs on kerosene. Bosch dual ignition with two spark plugs per cylinder; breaker and coil with battery and a breaker in magneto, provides positive ignition. Engine is operated with the Bosch high tension magneto, the two remaining systems being reserve.

Fuel consumption line of the engine is almost horizontal, so that fuel consumption per horsepower at any operating speed varies but little.

Driller and two helpers are used per shift.

Primarily to reduce the expense of prospecting, but to insure picking up an existing sand in a core, these rigs are being built and used by a group having several large blocks of acreage in Southwest Texas. The rig covered by drawing is being sent to Live Oak County, Texas, for prospecting on the Wallis Wade Ranch.

Own Power Erects

The same designer builds a smaller rig and one of these is for prospecting for salt dome. This rig has the steel

A Case tractor being used to furnish power for one wildcat test

PERSONAL MENTION-MEN YOU KNOW

O. F. Forbron, Jr., manager of the Corsicana-Powell field branch store of the Longhart Supply Company, has returned from a visit spent with relatives in Bernice, Louisiana.

R. G. Jennings, prominent oil operater of Pittsburgh, Pennsylvania, has been elected president of the Columbia National Bank of that city, succeeding his father, the late E. H. Jennings.

Glen Kahle, former production manager for the Humphreys Oil Company at Mexia and Corsicana-Powell fields, was in Dallas late last week, and announced that he had purchased an interest in both Brannon & McCamey and Blackstock & Gracy, drilling contractors, and that shortly after the first of the year offices would be established in Dallas. Kahle expects to spend the holidays with his family in California.

Raymond Ford, district manager for Williamsport Wire Rope Distributing Company, has returned to Houston from a trip to Corsicana last week.

E. C. Sooy, president of the Kansas City Hay Press Company, has returned to Kansas City after an extended visit of several months spent in the East.

Charles T. Tewkesbury, Mid-Continent representative of the Pyle-National Company with headquarters in Tulsa, has shook the dust of Oklahoma from his feet and is sojourning for the time being in Wyoming and Montana points.

J. A. Undercofler, connected with the Lubricup department of the Williamsport Wire Rope Distributing Company, is in Houston, Texas, for a three weeks' visit. He intends calling on the trade and renewing old acquaintances.

Judge Harry H. Smith, secretary of the Mid-Continent Oil and Gas Association; O. V. Borden, secretary of the Purchasing Agents' Association of Tulsa; A. V. Bourque, secretary of the Association of Natural Gasoline Manufacturers, and others are included in the delegation from the Mid-Continent going to the A. P. I. meeting in St. Louis.

M. B. Hitchcock, vice president of the Ever-Grip Wrench Company, is away from his Chicago offices on a business trip through the Mid-Continent oil territory.

P. J. Shouvlin of the Superior Gas Engine Company of Springfield, Massachusetts, is touring the Western and Southwestern oil country.

J. A. Couch, president of the Petroleum Iron Works of Pennsylvania, is making a visit to the Corsicana-Powell district to inspect the erection of P. I. W. tanks.

L. H. Prichard of Anderson-Prichard Oil Corporation of Oklahoma City has gone to Clarksville, Mississippi, to look after developments in connection with a drilling well in that section.

W. R. BOYD, JR.,

Assistant secretary and counsel of the American Petroleum Institute, who was largely responsible for the program of the fourth annual meet at St. Louis

W. H. Gray, president of the National Association of Independent Oil Producers, has returned to his headquarters in Tulsa after a trip in the East which included a visit to Washington.

B. Johnston, general superintendent of production of the White Oil Corporation, has left Houston on a business trip to Wichita Falls.

J. P. Walker, vice president and general manager of the American Tank Company of Oklahoma City, was in Tulsa this week.

C. H. McCandless of Butler, Pennsylvania, of the Cincinnati Oil and Gas Company, is visiting the company's holdings in the Mid-Continent field and in New Mexico.

H. B. Troutman, service engineer for the Hazard Manufacturing Company at Tulsa, spent the past week in Texas oil fields renewing acquaintances with old friends.

M. H. Ensinger, Mid-Continent representative of the American Cable Company of New York, has completed a tour of the Southern Oklahoma fields in the interest of company business.

C. S. Campbell of the W-K-M Company is in Arkansas assisting J. W. Gillespie, district manager, during December, particularly in introducing the Emsco screen and the new over size standing valve now being made by the W-K-M Company.

W. C. Meeks, sales manager of the Bridgeport Machine Company, was away from his office in Wichita, Kansas, last week on a business trip to Tulsa and other Oklahoma points.

W. H. Graham, manager of the wire line pumping department of the Williamsport Wire Rope Distributing Company, spent the past week in Houston, Texas. He is now at Corsicana.

E. A. Richards, Mid-Continent representative of the R. & J. Dick Company, belting manufacturers, has recently undergone an operation and now is in the P. & S. hospital in Tulsa.

W. C. Rae, sales manager for the Trumble Gas Trap Company at Los Angeles, returned to headquarters last week after a trip to Bakersfield and other Northern California oil fields.

Robert H. Bratsch of the Boyd (Humphreys Interests) Oil Company of Dallas was recently married to Miss Bess Clifton Sheppard, also of Dallas, and have since returned from their honeymoon.

Col. A. E. Humphreys of Mexia fame passed through Dallas late last week en route to New York City, where it is understood that he is to attend to the complete financing of the Boyd Oil Company, which has been launched by the Colonel and associates to develop their extensive wildcat holdings in East Central Texas during the coming year.

Judge Edw. H. Chandler, general counsel of the Sinclair Companies of Tulsa, Oklahoma, and W. O. Beall and J. M. McCune, attorneys of the Sinclair Companies, visited the Houston offices the latter part of last week.

L. L. Pepper has resigned from the production department of the White Oil Corporation to accept a position with another oil company in Houston.

Permits Granted and Locations for New Wells
(Arkansas—Louisiana—Texas)

LOUISIANA

Bossier Parish—Humble Oil & Ref. Co.'s Bliss & Wetherbee A-8, 10-19N-11W, 1220 ft S and 100 ft W of center of sec. R. O. Roy & Co.'s Scanland 22, 15-19N-11W, 478 ft E and 853 ft S of NW cor SW¼ NE¼; Scanland 23, 15-19N-11W, 856 ft E and 853 S NW cor SW¼ NE¼; Scanland 24, 15-19N-11W, 1235 ft E and 854 ft S NW cor SW¼ NE¼; Scanland 25, 15-19N-11W, 1435 ft E and 854 ft S NW cor SW¼ NE¼; Scanland 26, 15-19N-11W, 1813 ft E and 854 ft S NW cor SW¼ NE¼; Scanland 27, 15-19N-11W, 2192 ft E and 855 ft S NW cor SW¼ NE¼; Scanland 28, 15-19N-11W, 2192 ft E and 478 ft S NW cor SW¼ NE¼; Scanland 29, 15-19N-11W, 1813 ft E and 477 ft S NW cor SW¼ NE¼; Scanland 30, 15-19N-11W, 477 ft S and 1432 ft E NW cor SW¼ NE¼; Scanland 31, 15-19N-11W, 1235 ft E and 477 ft S NW cor SW¼ NE¼; Scanland 32, 15-19N-11W, 856 ft E and 476 ft S NW cor SW¼ NE¼; Scanland 33, 15-19N-11W, 478 ft E and 476 ft S NW cor SW¼ NE¼.

Caddo Parish—Dixie Oil Co.'s Dillon 57, 14-21N-15W, 2300 ft W and 2495 ft N SE cor sec.

Jefferson Davis Parish—Fred I. Getty's Sturtivant 1, 27-10S-4W, 475 ft E and 100 ft N SW cor sec.

Livingston Parish—Indian Bayou Oil & Gas Co.'s Round 1, lot 4, blk 11, in town of Springfield.

Morehouse Parish—Richland Oil & Gas Co.'s Chesa Wymond 1, 32-19N-6E, 1280 ft N and 320 ft E center sec.

Ouachita Parish—Southern Carbon Co.'s Fairbanks 7, 5-19N-4E, 1890 ft E and 2890 ft S NW cor sec.

St. Landry Parish—J. R. Thistlethwaite et al's Signor 1, 19-4-S-5E, 514 ft E and 1734 ft N of SW cor of sec.

ARKANSAS

Columbia County—Pete Hoffman et al's Buffington 2, 24-15-20, NEc NE¼ SE¼.

Ouachita County—Burch & Walker's La Grone 4, 25-15-17, 200 ft S and W of NEc of sec. Hale et al's Ward 2, 25-15-17, 200 ft N and W of SEc NW¼ NE¼. Penguin Oil Co.'s Hardin 2, 27-15-16, 200 ft S and W of NEc SW¼ NE¼. Smith Ref. Co.'s Patton 4, 31-15-16, 200 ft N and W of SEc NW¼ NW¼. Wingfield et al's Fincher 1, 32-15-16, 200 ft S and W of NEc of sec.

Union County—Barnesdale & Foster's Murphy 4, 17-16-15, 200 ft S and E of NWc NE¼ NE¼. Crosby Trust's Harrell 2, 17-16-15, 660 ft N and 200 ft E of SWc SE¼ NW¼. Federal Pet. Co.'s Murphy 2, 22-16-15, 200 ft S and W of NEc NE¼ NW¼. Haviland Oil Co.'s Clawson 1, 23-16-15, 240 ft S and E of NWc NE¼ SW¼. Hodges et al's Murphy 1, 7-16-15, 200 ft N and E of SWc SE¼ SW¼. Page et al's Helms 1, 23-16-15, 240 ft N and W of SEc SW¼ NW¼. Quaker City Pet. Co.'s Salone 1, 14-17-15, 200 ft N and W of SEc W½ SW¼ NE¼. Sam Richardson's Murphy 2, 23-16-15, 200 ft S and W of NEc NE ¼ NW¼. Sanford et al's Murphy 1, 8-16-15, 200 ft N and W of SEc SW¼ SE¼ Smackover Pet. Co.'s Murphy 2, 14-16-15, 200 ft N and E of SWc NW¼ SW¼. Wilroy et al's Goodwin 1, 23-16-15, 240 ft S and W of NEc NW¼ SW¼. Woodley et al's Townsen 2, 6-18-14, 660 ft S and E of NWc NW¼ SE¼.

TEXAS

Archer County—Bridwell & Palmer's U. S. Davis 1, Amer Trib sur, blk 690, 150 ft to N and E lines; 2, 50 ft to S and E lines. Sunshine State Oil & Ref. Co.'s Carter Bros. 13, M. C. S. L., lot 58; 14 and 15. Chenault & Lea's L. F. Wilson C-5, S. P. Ry sur No. 4, 300 ft W No. 1. Hobbs, Chenault & Burleson's N. D. Goldsmith 2, G. P. Diggs sur, 520 ft to N and 150 ft to W line. Shamrock Oil Co.'s J. T. Richardson 1, G. P. Diggs sur, 150 ft to W and 500 ft to N line. Sunshine State Oil & Ref. Co.'s N. J. Parish et al 2, S. P. Ry sur No. 2, 300 ft W No. 1. Hudspeth & Rubsam's W. H. Taylor 2, S. P. Ry sur No. 2, 600 ft NW No. 1. Walducke Oil Co.'s J. R. Garvey 1, T. E. & L. Ry sur 1855, 750 ft to N and 45 ft to W line. Underwood Drilling Co.'s H. Wilmot 3, S. P. Ry sur No. 4, 300 ft N No. 2. Camp Oil & Gas Co.'s L. F. Wilson 1-H, S. P. Ry sur No. 4, 150 ft to S and E lines. Sixty-Six Oil Co.'s L. F. Wilson 6, S. P. Ry sur No. 4, 352 ft E No. 5. Staley & Wynne's A. P. Nichols 1, Amer Trib sur 150 ft to S and W lines. Muchison & Fain's L. F. Wilson 1, Amer Trib sur, 150 ft to N and E line. Carter Farms Oil Co.'s J. H. Carter 7, Amer Trib sur, blk 93, 300 ft W No. 6.

Atascosa County—Frontier Oil Co.'s G. W. Foster 1, J. P. McKinney sur; J. Harvey 2, J. P. McKinney sur. Witherspoon Oil Co.'s Langley Bros. 1, J. Sharpe sur, 360 ft to W and 203 ft to N.

Bexar County—Idaho Oil Co.'s W. B. Kilborn 2, J. T. White sur, 487 ft W No. 2; 3, 487 ft W No. 1. National Oil Corp.'s A. Cohen Est. 3, Rodriguez sur, 500 ft to S and 1500 ft to W line.

Callahan County—Pennant Oil & Gas Co.'s Albin 4, E. H. Brook sur, 200 ft to W and 430 ft to S line. Parkersburg Drilling Co.'s Mrs. W. E. Pruitt 1, T. E. & L. Ry sur No. 2278, 150 ft to N and 1250 ft to W line. Ramming & Miller's Mrs. M. Kane 1-B, T. E. & L. Ry sur No. 2271, 150 ft to S and E lines; D. Forbes 6, T. E. & L. Ry sur No. 2279, 300 ft E No. 5; 7, 300 ft E No. 6. Godley Oil & Gas Co.'s J. H. Ogle 2, T. E & L. Ry sur No. 2297, 325 ft to S and E lines; 3, 300 ft E No. 2; 4, 472 ft to E and 150 ft to N line. Edres Herbert's Mrs. I. Slaughter 5, sec 9, D. & D. Asy sur, 300 ft to N and 600 ft to W line. Shamrock Oil Co.'s W. R. Jackson 5, sec 6, D. & D. Asy sur, 229 ft S No. 4. Ben Turgeon's D. A. Forbes 9, T. E. & L. Ry sur No. 2279, 150 ft to S and W lines. Warren & Hayes' S. M. Eubanks 6, T. E. & L. Ry sur No. 2279, 300 ft W No. 3; 7, 300 ft W No. 6; 8, 300 ft W No. 5; 9, 300 ft W No. 8.

Clay County—R. N. Hamilton's C. J. Gallagher 1, B. B. B. & C. Ry sur, 200 ft to W and 160 ft to S line.

Eastland County—Panhandle Ref. Co.'s L. A. Hightower et al's 7, W. Van Norman sur, 533 ft SE No. 6.

Falls County—Bryan Patterson Co.'s Irwin 1, Manchaca sur, 150 ft to N and W lines.

Harris County—Burley Oil Co.'s Landslide 30, Geo. Herman sur, blk 10, 100 ft W No. 26.

Hudspeth County—Wm. Loftus' G. T. Veal 1, H. C. S. L., blk 13.

Karnes County—California-Texas Pet. Co.'s J. Jazembek 1, L. Manchaca sur, 1000 ft to W and 300 ft to S line.

Liberty County—Yount Lee Oil Co.'s Taylor Hrs 4, J. DeVore sur, SE cor. Gulf Prod. Co.'s D. Hannah 12, J. DeVore sur, 75 ft to N and E lines.

Mitchell County—California Co.'s A. L. Miller 2, T. P. Ry sur, sec 22, 330 ft to W and 380 ft to N line.

Medina County—Ozard Oil Co.'s L. J. Schmidt 1, P. Durst, 700 ft to S and W lines.

Milam County—C. G. Drake's H. T. Coulter 1, T. J. Chambers sur. Roundtree & Simpson's Roundtree 3, Chambers sur, 180 ft to S and E lines. Texas Pet. Dev. Co.'s C. F. Neihaus 6, C. F. Neihaus sur, 300 ft W No. 5. Jennings et al's H. A. Branch 3, T. J. Chambers sur, 150 ft W No. 2.

McMullen County—Coyle Concord Oil Co.'s Texas 1, M. Hely sur, center of Frio River; State 2, 375 ft NW No. 1. Napier & Laughter's J. Stitz 1, Jas. Garner sur, 225 ft to N and W lines. H. T. Finnell's C. R. Byrne Est. 1, C. R. Byrne sur near ranch house.

Navarro County—Gulf Prod. Co.'s J. B. Bush 3, Jas. Smith sur, SE cor Stroube & Stroube's Hill Bros. 1, Hrs J. Smith, 150 ft to S and E lines. Barkley & Meadows' I. N. Cerf 2, Jas.

(Continued on page 33)

Drilling Costs Cut by Lighter Equipment

(Continued from page 26)

derrick mounted on the same chassis with the draw works and engine. Stopping at the location, this rig erects the derrick by hooking the traveling block to a tree or stakes, using the engine power through the draw works. With the slush pit dug, this rig can be drilling in two hours after reaching the location. The rotary takes eight and one-fourth inch casing and is all steel with machine cut gears, all equipment of rings and slips, screw up device and drive bushing, shaft drive for speed. This rig will drill a 2,000 foot hole six and seven-eighths inches in diameter with two and one-half inch drill pipe and takes a two-inch core with the same core barrel arrangement.

Previous to the introduction of drilling machines built especially for such work, many producers in the Coastal fields have made use of farm tractors to drill both test wells and in some instances wells within the proven areas.

The Case tractor has been most commonly used for such drilling, although other types of tractors have been successful.

In most instances both the rotary and the pumps have been driven by one tractor, the draw works being attached to an extension of the tractor drive shaft, the pumps being driven by a belt from the tractor pulley.

After attaching the extension shaft from the tractor shaft to the draw work, the pin, holding the shaft stationary in the tractor wheels, is removed. This permits the turning of the tractor shaft and its extensions, giving the tractor power direct to the draw works and giving the driller as flexible power as the tractor permits.

The mud pump stationed in line with the tractor but farther removed from the derrick, is driven by a belt.

Those having experience with the tractor for drilling power, say wells can be drilled at not more than $1 per foot, where light tractors are used.

A complete outfit, using the smaller Case tractor, has been built for less than $9,000. Larger tractors increase this cost.

Both the gas engine machines and those getting power from tractors are meeting with good success in this particular section and much has been done to reduce the tremendous expense involved in oil exploitation work. While these lighter machines have been specially adapted to work in the coastal section, heavier type machines, with reduced operating costs, are being made for Mid-Continent and other prospective districts.

Overcome Many Problems in Pipe Line Work

One of country's pioneer line men tells of conditions governing this department

By D. S. Bushnell
President of The Buckeye Pipe Line Company

Many problems are encountered in operating pipe lines, and the problems vary considerably in each section of the country. Mr. Bushnell, president of the Buckeye Pipe Line Company, is one of the pioneer pipe line men of the country and has personally met and overcome these problems.

Excerpts from his speech before the Fourth Annual Meeting of the American Petroleum Institute at St. Louis are reproduced herewith—The Editor.

OF THE several specialized types of transportation, the pipe line, as is well known, is peculiar in that, generally speaking, its activities do not build up or develop the country tributary to it, but on the contrary tend to exhaust that territory from the moment it first begins to function.

This is clearly illustrated in the case of practically all of the pipe lines of this country, which traverse long distances devoid of any source of supply or consumption between the oil fields served and refineries where crude is consumed. Unlike the railroads, it cannot handle a variety of commodities, nor small quantities or "package freight" and further, speaking broadly, its transportation movement is in only one direction—from area of production to center of consumption. These unavoidable limitations make it self evident that no pipe line would be built as a good business venture, without being assured in some way a liberal source of the crude supply at one end and a stable market for consumption at the other. Some pipe lines, of course, have been built, equipped with the functions of a purchaser and seller—others as a mere integral part of a complete organization—producing, transporting and consuming its own crude oil.

The endowment of the pipe lines with the functions and obligations of public carriers raises some most interesting problems.

Efficiency the Problem

In many cases, being entirely separated from the control of, or even interest in a source of supply, the pipe line in its efforts to obtain business must seize every opportunity to increase its efficiency and to reduce its expenses. The low cost of pipe line transportation is well known, but that very fact is based on the organization of the pipe line to do a certain bulk business, and hence the difficulty in times of business depression of effecting economies of operation beyond a certain point. There is the case of a pipe line company whose lines are connected to more than 31,000 wells in one state. The operation of this gathering line system to care properly for the interests of its thousands of patrons requires a certain organization which cannot be reduced or simplified below a given point, and yet a much greater amount of business could be handled by this same organization at practically no increase of expense could such business be obtained. Thus it will readily be seen that the efficiency of pipe line transportation depends to some extent on the ability of the line to obtain the amount of business for which it was designed.

Again, a pipe line is generally, if not always, constructed to meet the immediate demands of a new field or pool, but so designed as to permit of increase in capacity according to the best engineering practice should the demands of its business require it. How to determine the limits of these demands, without either overbuilding on the one hand or driving business to the competitor because of limited facilities on the other, is one of the serious problems confronting the pipe line executives in active producing territory; and we all know to our sorrow that it is not always possible to find the right answer.

Improved Construction

The foregoing are but a few of the problems involving policy and operation which the pipe line must solve—and solve correctly. There are, however, many others, intensely interesting and of a more or less purely technical nature, which may be briefly mentioned. In years gone by the pipe line in the oil industry was regarded as a simple affair and easily managed. The pipe had to be screwed together—perhaps ditched and buried—perhaps not. The old 18x5 (or several of them) was set up and the required boiler power furnished. Some light buildings to house the machinery were constructed, a few tanks were built and the line was complete. But then came the inevitable improvements—the compound direct acting pump—the triple direct acting pump—the "high duty" direct acting pump—and finally the cross compound and triple expansion condensing fly-wheel pumping engine with Corliss valves, representing probably the most economical steam driven pump yet developed. But the extension of the oil producing areas of the United States with consequently greatly enlarged pipe line facilities, introduced the problems of suitable water and fuel supply for steam purposes which were not always available. The internal combustion engine had been developed but hitherto not in large units, but an improved type of engine appeared on the market which seemed to solve these problems.

It was the privilege of the speaker to have been identified with one of the earliest pipe line installations of these engines, which after some preliminary adjustments, operated with unfailing regularity; one of the earliest tests being a continuous run of over 1000 hours. This performance has since been far excelled by this engine, it having run continuously for nearly 3000 hours. The story of the power development may be duplicated in that of the storage tank. From the small, light tank with lap rivetted seams to the great 80,000 and 150,000 barrel tank with double butt strap seams is a long jump, but the years have seen the change. In the development of the storage tank or working tank there has arisen the necessity of more careful handling of the crude petroleum to the end that waste and loss may be eliminated as far as possible. Thus, there have been produced the rivetted roof, the welded tank—both shell, bottom and roof, the gas tight roof with breather lines and relief valves, and such modifications as floating roofs, water roofs, etc. Of course, these developments have not been restricted to the pipe lines, but many of the early efforts to reduce the losses on crude oil in tankage were initiated by the pipe lines—as, for example, the experiments with different colored paints for tank shells and roofs to minimize evaporative loss. Experience seems to indicate the reasonable deduction that the gas tight roof materially reduces the fire hazard, as it cuts down the flow of gas rising from the tank to be met by the lightning flash, much as a snuffed candle will re-ignite from the lighted match held above it. It would seem that the possibility of further improvements in tank construction may be the means of effecting still greater economies in operation.

Kind of Pipe

The pipe itself, of course, constitutes a large part of the investment in the pipe line plant. Formerly, pipe was made of iron but the increased demand developed the use of Bessemer steel for this purpose. This at first proved unsatisfactory on account of its brittleness, resulting in constant breakage even during construction. The problem seemed to be solved finally by the development of pipe made from soft steel plates. This pipe could be produced rapidly to meet the growing demands, and was easily handled in construction work and durable in use. In early days but little attention was paid to protective coatings for the line, which was either laid on the ground or buried in a shallow ditch.

But the passage of time showed that some form of pipe coating or protection was required in all but well drained soil. Cement was used with great success for this purpose and proved satisfactory for ordinary soil corrosion, but the high cost of material and application made it essential to discover some less expensive substitute. Graphite and lead paints were tried but proved lacking in durability and protective quality on buried pipe. Finally, gas tar or refinery tar was tried with excellent results. Many different methods of application were tried before the pipe line engineers were successful in devising a simple way to apply the coating which seems to answer all requirements. There

(Continued on page 61)

Engineers Believe New Gas-Bearing Zone Has Been Found in East Smackover Field

RECENT investigative work performed by engineers of the Department of the Interior, attached to the Dallas office of the Bureau of Mines, indicates that a new gas bearing zone of considerable importance has been developed in the East Smackover oil and gas field in Arkansas. This gas bearing formation is in the second productive zone, but lies immediately above the main second zone sand, which is producing oil in the West Smackover field. The Bureau of Mines engineers designate this as the "Primm gas zone" to distinguish it from the "Meekin sand," a name which has been applied to the main second zone oil sand of the West Smackover field. Production from the Primm gas zone was first developed on the Primm farm, in section 1, township 16 south, range 16 west. The second zone sand was briefly discussed in the bureau's preliminary report on the eastern part of the Smackover field, recently published by the State Department of Mines, Manufacturers and Agriculture, Little Rock, Arkansas.

A study of the results of recent drilling makes it possible to revise the earlier work with a considerable degree of certainty. The large gas wells drilled in section 1, township 16 south, range 16 west; sections 6 and 7, township 16 south, range 15 west; section 31, township 15 south, range 15 west; and section 36, township 15 south, range 16 west, have proved a reservoir of gas in the East Smackover field which probably underlies a large area. The gas comes from about 40 feet of sandy formation, called the Primm gas zone. The rock pressure in this gas zone is about 1000 pounds per square inch. The recent drilling further shows that the Meekin sand carried salt water in the East Smackover field, except on the highest part of the Norphlet dome.

The available data for estimating the extent of the gas reservoir are meager. The areal extent of this gas field is roughly estimated as not less than 12,000 to 13,000 acres. This estimate is based on the structural position of two wells that produce some oil and large quantities of gas. The estimated area is that of the part of the structure above these wells. Wells drilled on lower parts of East Smackover structure will probably produce oil and gas from the same formation.

It appears that the sands in the gas bearing zone are not developed as regularly as the Meekin sand. The equivalent of the Primm gas zone has only an occasional sand lense in the West Smackover field. There these sand lenses produce oil in a few wells. It is possible that sand is lacking at this horizon in some parts of the area outlined as a probable gas field.

There is not sufficient information available to make an accurate estimate of the total thickness of gas bearing formations. Twenty-one feet of hard sand and two feet of sandy shale were logged above the Meekin sand in Roxana Petroleum Corporation's Primm No. 1, and 12 feet of hard sand with 13 feet of sandy shale were logged above the Meekin sand in H. L. Hunt's Primm No. 2. These wells are located in section 1-16-16.

The large, sustained production with a comparatively slow decline of rock pressure in Roxana Petroleum Corporation's Primm No. 1 would indicate that the sand body has considerable volume.

Four wells have shown that the Meekin sand carries salt water in the East Smackover field. Salt water was found in Union Gas Company's Primm No. 1, section 1-16-16, as a depth of 381 feet below the top of the Nacatoch sand at 1834 feet below sea level. The Metric Oil Company's Horton No. 3, section 36-16-15, which penetrated the top of the Nacatoch sand at 1837 feet below sea level, encountered salt water at 370 feet below the top of the Nacatoch sand or five feet below the top of the Meekin sand. A slight show of oil was logged in the first five feet of the Meekin sand in this well. The salt water is doubtless edgewater in this sand. It is not unlikely that the sand will produce oil at higher positions on the structure.

The preliminary report on the eastern part of the Smackover field, by the Bureau of Mines, contains a map with contours drawn to show the depth of the top of the Nacatoch sand below sea level. This map can be used to calculate the depth of second zone wells. The top of the Primm gas zone and the Meekin sand lies 325 feet and 365 feet respectively below the top of the Nacatoch sand.

Without Artifice

BEFORE a man goes out to see a maid, he shaves, has a bath, and dons fresh linen.

Something like this often happens to the words and pictures men use to describe a product when they go out to court prospects.

The maid wouldn't recognize her man with a stubble of beard on his chin and work-a-day clothes on his back. No more, if unduly honeyed words have been used to describe it, would the prospect recognize the product in actual service.

And so we wish that prospects could hear the every day inter-company reports which come to us about Axelson Amco Pumps (working barrels). The ungarnished truth can be very interesting on occasion.

"We installed one Amco for the ——— Company in August," writes one of our men from Texas, "and have sold them seven more since then. They have increased their production in each well from 10 to 25 barrels with these pumps."

And this from another section: "The well had never pumped more than five days at any time or made over 180 barrels in one day. But now that an Amco has been installed, the well makes 267 barrels and there are no shut downs."

There is nothing unusual about these reports. At any Frick-Reid Store—and they are everywhere west of the Mississippi—our men will gladly tell you what Amco Pumps are doing in your field. They will show you the Amco, too, and give you literature illustrating and describing it without artifice.

In Oil Field Equipment—the most HUMAN organization in America.

Frick-Reid Supply Co.

Tulsa, Okla. Pittsburgh, Pa.

West of the Mississippi—Stores Everywhere

FIELD NOTES AND PRODUCTION STATISTICS

Sixty Wildcats Drilling in Los Angeles Basin

Old fields going off but new fields are expected—Plent of empty storage

Los Angeles, Calif., Dec. 8.—Sixty wildcat wells are drilling in the Los Angeles basin in Southern California, thus leading many oil men to expect one or more new fields within the next six months. This large drilling campaign in wildcat territory presages rather an interesting year for California in 1924, and in the face of this drilling campaign, shut in wells in the older fields of the state are being opened, and inside of the next 90 days it is doubted that a well worth placing on the pump will be shut in.

Another circumstance that leads one to expect a busy and active year in California during 1924 is the large amount of empty storage, this now being estimated at 20,000,000 barrels for all companies in the state. By the first of the year the amount should be even greater. The presence of this empty storage is having a tremendous effect on the demand for crude, causing the larger companies to make rather liberal contracts and forcing the smaller buyers to offer premiums with little oil forthcoming.

Crude Contracts

One authority has placed the amount of crude contracted for to move from California to points on the East Coast at 115,000 barrels a day throughout 1924. The Associated Oil Company has contracts with the New England and the Tidewater calling for the delivery of 300,000 barrels a month to each company, but these contracts will expire January 1. They will not be renewed, certainly not at the prices named in the old contract. Naturally it is expected that other contracts will be made covering 1924, swelling the total monthly movement to some extent.

CALIFORNIA FIELD OPERATIONS

The following table from statistics compiled by State Oil and Gas Supervisor R. D. Bush for California for the past several weeks gives a true insight into field activities:

Month ending—	New wells started	Water shutoff tests	Deepening jobs	No. wells aband.
*June	120	195	59	22
July	94	145	46	23
*August	96	141	41	26
Sept.	122	194	39	36
Week ending:				
October 6	24	28	10	9
October 13	26	36	8	4
October 20	23	33	10	7
October 27	41	34	10	5
November 3	23	37	15	1
November 10	17	37	11	10
November 17	32	45	7	5
November 24	28	32	15	7
December 1	18	41	7	9

*Five weeks in month.

This authority, taking the crude contracts into consideration, and adding the amount to the natural consumption in the West, estimates that production and consumption curves will blend during the month of June, if not sooner. If no new fields are developed in that time, if Torrance proves to be a field of small production and if the larger fields decline at a greater rate than expected, then the production and consumption curves will meet before June. It is almost certain that production will be less than consumption, including shipments, next July. Naturally a new big field might come in unexpectedly and throw these calculations out of kelter.

Throwing Away Money

There are 340 wells drilling at Long Beach and Santa Fe Springs, about 210 of which are drilling 4000 feet. Well posted oil men are of the opinion that very few of the drilling wells at Santa Fe Springs will pay for themselves. At Long Beach probably 75 per cent of the drilling wells will not pay for themselves in production. In round figures a completed well in these two fields costs $150,000, and the new wells in many instances are extremely small. In some instances, extra good

(Continued on page 33)

Imports of Petroleum at Principal United States Ports

The following figures represent the total imports of crude oil for the month with the current month given by weeks:

	Atlantic Ports						Gulf Coast Ports					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	N. Orleans Baton Rge.	Port Arthur Sabine Pass	Tampa	Total	Total at All Ports
August	717,000	728,845	2,264,000	661,866	1,291,000	5,662,611	987,000	861,190	1,594,000	157,000	3,599,190	9,261,801
September	774,000	739,814	2,551,701	657,964	845,201	5,237,680	1,099,000	1,159,531	748,000	150,000	2,956,531	8,194,211
October	616,769	555,803	1,339,150	524,558	870,020	3,907,066	1,159,000	1,008,440	1,614,000	99,000	3,880,440	7,787,506
November	692,000	472,465	1,933,263	728,490	849,428	4,676,527	1,305,000	889,751	1,046,000	74,000	3,314,751	7,991,278
December	774,825	693,120	2,606,130	713,563	1,901,498	5,874,917	1,530,000	847,241	828,000	80,000	3,285,241	9,160,158
January	475,000	745,115	1,636,020	641,006	1,163,120	4,760,155	1,053,000	733,284	1,182,654	40,000	3,011,953	7,772,108
February	421,000	553,510	1,163,971	570,329	1,150,819	3,859,429	1,079,000	951,818	1,019,000	167,000	3,216,818	7,076,247
March	265,000	450,000	2,020,139	848,000	1,406,577	5,045,924	1,857,000	1,611,794	1,453,000	240,000	5,162,794	10,208,718
April	370,000	669,000	1,074,000	625,000	591,000	3,319,000	1,615,000	1,020,000	1,135,000	168,000	4,362,500	7,681,500
May	344,000	515,000	1,026,000	437,000	615,000	2,937,000	1,351,000	910,000	1,184,000	127,000	3,582,000	6,519,000
June	314,000	421,000	1,791,000	755,000	809,000	4,090,000	1,515,000	1,142,000	1,062,000	229,000	3,948,000	8,038,000
July	287,000	465,000	1,806,000	448,000	898,000	3,876,000	1,471,000	1,120,000	833,000	92,000	3,516,000	7,392,000
September	268,000	565,000	1,744,000	660,000	686,000	3,923,000	1,776,000	1,397,000	880,000	224,000	4,277,000	8,202,000
October	365,000	292,000	1,194,000	536,000	816,000	3,203,000	988,000	1,330,000	380,000	50,000	2,248,000	5,951,000
November 3	.....	60,000	315,000	111,000	41,000	527,000	287,000	315,000	144,000	.....	746,000	273,000
November 10	70,000	140,000	534,000	115,000	200,000	1,059,000	329,000	102,000	102,000	96,000	776,000	1,835,000
November 17	.....	195,000	66,000	65,000	244,000	570,000	644,000	228,000	185,000	.....	1,057,000	1,627,000
November 24	153,000	.....	279,000	285,000	272,000	989,000	218,000	355,000	120,000	15,000	708,000	1,697,000

NOTE—Figures by American Petroleum Institute.

Receipts of California Oil at Atlantic Coast Ports

The following shows the receipts of California oil at Atlantic Coast ports by months with the current month given by weeks:

	Atlantic Ports						Gulf Coast Ports					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	N. Orleans Baton Rge.	Port Arthur Sabine Pass	Tampa	Total	Total at all Ports
March	442,000	184,000	1,355,000	496,000	615,000	2,691,000	.....	.....	.....	.....	.....	2,691,000
April	105,000	256,000	2,456,000	502,000	320,000	3,639,000	.....	478,000	.....	.....	478,000	4,117,000
May	444,000	72,000	1,259,000	764,000	964,000	3,553,000	.....	300,000	53,000	.....	353,000	3,906,000
June	821,000	160,000	3,206,000	826,000	808,000	5,821,000	.....	664,000	.....	.....	664,000	6,485,000
July	443,000	75,000	2,068,000	741,000	699,000	4,080,000	.....	559,000	.....	.....	559,000	4,639,000
August	329,000	229,000	2,956,000	836,000	683,000	5,033,000	.....	970,000	70,000	.....	1,040,000	6,073,000
September	1,028,000	237,000	2,581,000	621,000	443,000	4,910,000	.....	703,000	.....	.....	703,000	5,613,000
October	779,000	224,000	2,503,000	779,000	429,000	4,714,000	.....	746,000	.....	.....	746,000	5,460,000
November 3	148,000	.....	169,000	73,000	66,000	456,000	.....	214,000	.....	.....	214,000	670,000
November 10	.....	.....	950,000	95,000	65,000	1,110,000	.....	196,000	.....	.....	196,000	1,306,000
November 17	275,000	155,000	457,000	75,000	.....	962,000	.....	265,000	.....	.....	265,000	1,227,000
November 24	168,000	.....	726,000	341,000	140,000	1,375,000	.....	260,000	.....	.....	260,000	1,635,000

NOTE—Figures by American Petroleum Institute.

(U. S. Completions on page 41)

Average Daily Production for all U. S. Fields

Oklahoma

	This Week	Last Week
Burbank	78,880	84,445
Bristow	49,600	49,600
Tonkawa	48,280	47,750
Osage (outside Burbank)	23,550	23,450
Cushing	24,350	24,150
Okmulgee	22,225	22,225
Hewitt	20,675	20,675
Wewoka	15,335	16,990
Healdton	12,700	12,700
Duncan and Walters	6,725	6,700
Other fields	79,755	79,580
Total	382,075	387,920

Kansas

	This Week	Last Week
Eldorado	16,900	16,930
Greenwood	13,000	13,100
Elbing & Peabody	10,400	10,400
Fox-Bush	6,400	6,400
Blankenship	3,780	3,800
Augusta and Douglas	3,600	3,600
Florence and Covert	3,180	3,200
Leon and Webster	1,400	1,450
Other fields	9,825	9,750
Total	68,485	68,630

Louisiana

	This Week	Last Week
Haynesville	22,755	23,250
Caddo	11,150	11,060
Homer	8,970	9,105
Bellevue	7,100	6,290
Vinton	5,600	5,800
Bull Bayou	5,625	5,225
Elm Grove	1,070	1,200
Evangeline	700	700
Edgerly	400	400
Anse La Butte	10	10
Totals	63,380	63,040

Arkansas

	This Week	Last Week
Smackover	97,575	99,455
El Dorado	9,980	11,400
El Dorado East Field	7,440	7,690
Stephens	3,080	2,860
Irma	670	.....
Totals	118,745	121,405

California

Los Angeles, Calif., Dec. 8.—The daily average production of the California fields the past week, compared with the previous week, with producing wells in several fields, the past week, is about as follows:

	Last Week	Producing Wells	Prev. Week
Long Beach	242,000	302	240,500
Santa Fe Springs	195,000	277	206,500
Huntington Beach	69,800	229	70,250
Torrance	30,750	67	33,000
Compton	1,300	1	1,400
Totals	725,500		746,350

Million Barrels California Crude Oil to Atlantic Coast

Los Angeles, Calif., Dec. 8.—During the week ending Friday, 35 tankers departed from Las Angeles harbor and El Segundo carrying 1,738,048 barrels of crude, 361,192 barrels of fuel oil, 224,119 barrels of gasoline and 9480 barrels of kerosene.

The shipments were distributed as follows:

	Last week	Prev. week
Tankers departed	35	36
Total crude	1,738,048	2,059,092
Total fuel oil	361,192	324,400
Total gasoline	224,119	.....
Crude to Pacific	672,042	1,019,308
Fuel to Pacific	142,911	67,506
Gasoline, Pacific	.....	90,902
Crude to Atlantic	1,000,900	1,039,784
Fuel to Atlantic	.....	72,114
Crude to foreign	65,106	.....
Fuel to foreign	218,281	184,780
Gasoline, foreign	181,119	.....
Kerosene, foreign	9,840	.....

IDAHO REPORT

Boise, Idaho, Dec. 8.—Advising that "no oil seeps or saturated sand were found within this area," Arthur M. Piper, Idaho state geologist, has filed a report with the governor's office covering a survey of Power and Oneida Counties which advises against testing at this time.

Drilling equipment however, recently has been brought into Idaho to be used in the Arbon valley dome section of the state.

Texas

NORTH CENTRAL TEXAS

	This Week	Last Week
Corsicana-Powell	135,850	222,400
Mexia	40,000	40,000
Stephens County	23,710	23,750
Burkburnett	21,940	23,195
Electra	20,710	22,300
Archer County-Holliday	18,145	18,640
Desdemona-Gorman-Pioneer	7,910	7,855
Ranger-Eastland	7,050	7,110
Young County	4,850	4,875
Moran-Shackelford County	3,920	3,940
Currie	3,225	3,625
K-M-A	1,180	1,325
Strawn-Palo Pinto County	1,175	885
Mitchell County	915	1,030
Iowa Park	850	845
Brown County	595	680
Petrolia-Clay County	425	680
Reagan County	150	170
Coleman County	220	230
Richland	110	110
Thrall-Williamson County	60	65
Jack County	25	30
Totals	293,015	383,505

GULF COAST

Hull	17,800	19,800
Orange	15,040	15,000
Goose Creek	14,350	15,000
West Columbia	13,875	13,709
Humble	5,425	5,400
Sour Lake	4,885	4,650
Damon Mound	1,940	1,900
Saratoga	1,785	1,750
Batson	1,115	1,150
Pierce Junction	900	800
Spindle Top	850	875
Blue Ridge	530	600
Barbers Hill	325	350
Markham	110	100
Nacogdoches	110	110
Stratton Ridge	100	120
Big Hill	90	100
High Island	45	45
Richmond	5	10
Total Gulf Coast	72,280	81,520
Total North Texas	293,015	383,505
Luling (Caldwell County)	8,750	8,900
Mirando	6,500	6,500
Somerset	3,025	3,150
Rockdale-Minerva	500	500
Total for Texas	391,070	484,075

Condensed U. S. Production for Twelve Months

(Stated in Barrels)

This table is carried each week by The OIL WEEKLY, and shows daily production average for each state or section. Figures for Oklahoma, Kansas, Texas, Louisiana, Arkansas and Mountain States are compiled by The OIL WEEKLY, while estimates for California and Eastern States are furnished by the American Petroleum Institute.

Daily average for month	*Mid-Continent	North Central Texas	Texas Coastal	†Texas Total	Kansas	Okla.	Louisiana	Eastern States	Wyoming-Montana	Calif.	Ark.	U. S. Total
August	726,981	217,208	105,966	323,148	89,998	419,775	97,936	120,750	83,938	375,000	28,834	1,618,765
September	716,107	207,467	107,790	314,932	89,760	418,880	101,857	114,200	80,490	387,000	33,135	1,540,371
October	714,906	200,465	115,130	316,370	90,404	424,037	97,502	116,375	86,412	423,750	34,127	1,489,005
November	711,521	199,223	114,150	388,376	91,098	421,200	93,410	116,375	106,092	450,000	77,225	1,668,776
December	692,702	170,187	111,819	242,010	87,508	435,007	86,513	114,900	108,679	484,000	107,732	1,722,349
January (1923)	708,372	184,885	115,628	304,790	86,720	436,767	81,205	113,500	123,254	517,500	111,920	1,770,645
February	712,007	180,364	96,984	286,493	85,298	446,345	78,068	112,500	110,328	587,500	101,346	1,805,496
March	720,287	184,582	89,873	283,355	86,012	449,693	75,352	109,900	118,580	653,000	108,630	1,888,522
April	756,381	192,148	92,320	293,780	86,433	478,100	76,854	424,000	127,860	711,250	102,099	1,983,026
May	793,774	203,776	90,905	304,032	85,500	504,498	75,368	109,125	125,680	700,125	109,033	2,010,840
June	824,297	217,162	92,240	320,250	85,255	521,880	72,745	110,300	129,559	773,000	133,592	2,159,818
July	866,665	274,330	91,795	378,335	84,785	508,405	70,085	113,000	137,300	851,000	132,395	2,275,305
August	826,982	278,574	94,398	393,780	82,741	464,416	68,739	112,625	137,909	866,250	123,000	2,251,966
September	830,517	371,730	93,649	443,461	77,078	421,763	68,935	108,400	157,742	858,700	127,955	2,269,176
October	876,059	408,036	84,120	511,483	71,362	371,657	65,305	107,750	139,912	823,125	125,145	2,240,741
November	935,975	479,383	82,747	580,700	69,337	387,253	64,701	108,125	151,225	768,275	124,188	2,253,806
December 1	840,055	383,505	81,520	484,075	68,630	387,920	63,040	109,500	148,600	746,350	121,405	2,129,520
December 8	743,575	293,015	79,280	391,070	68,485	382,075	63,380	109,000	145,000	725,500	118,745	2,003,255

*Includes North-Central Texas, Kansas, Oklahoma.
†Beginning February, 1923, Somerset, Mirando, Rockdale and Luling production included.
NOTE—Mexia production included in North Central Texas.

Sixty Wildcats Drilling In Los Angeles Basin

(Continued from page 31)

wells are completed, but they are few and far between, especially at Santa Fe Springs.

In spite of several new wells at Torrance the past week, the daily production showed a decline. The action of the Standard's outpost well to the east at Torrance leads one to believe that the field will not extend very far to the east. It is also doubted if the Shell will get a well in its test one mile to the east of the Standard's outpost well. Torrance should be defined in the next 90 days. Tests below 4000 feet are yet to be drilled in the new part of the field and there might be a deeper sand as at Long Beach and Santa Fe Springs. Just who will drill these deeper tests is not yet known, but it is practically sure that such tests will be drilled.

Opening Old Wells

The C. C. M. Oil Company (Santa Fe interests) was opening a number of shut in wells in the Midway field this week. By the end of next week it is expected this company alone will have opened a total of 160 shut in wells in this old field. Other larger companies, who shut in their pumpers in the old field when the production reached such proportions in the Los Angeles Basin, are preparing to open up their wells and within three or four months there will be practically no shut in production in California. At least those who are making their estimates on future production in the state are basing their calculations along these lines.

Texas Drilling Permits

(Continued from page 28)

Smith sur, 300 ft W No. 1. Humble Oil & Ref. Co.'s S. D. Ramsey 14, Hrs. J. Smith sur, 300 ft N No. 11. Johnson & Stocks' B. W. Harvard Est 3, J. D. Matthews sur. W. S. Yoder's B. W. Harvard 3, J. D. Matthews sur, S No. 2; 4, S No. 3. J. K. Hughes Dev. Co.'s M. M. Alexander 6, Jas. Smith sur, 300 ft NW No. 3. L. & W. Oil Co.'s L. E. McCormick 1, J. Bragg sur, 150 ft to S and E lines. J. E. Smith et al's W. Goldman 1, J. Lockart sur, 150 ft to N and E lines. Simms Oil Co.'s H. B. Boyd 4, Meador & Bragg sur, 150 ft to N and 1175 ft to E line. Grandfield Bros. & Penn's Mrs. W. A. Reed 1, J. L. Millican sur, 150 ft to N and W lines.

Orange County—Gulf Prod. Co.'s F. T. Pevito 5, Wm. Dyson sur, SE cor.

Palo Pinto County—Upham Gas Co.'s J. H. Wharton 2, Geo. Green sur, 2400 ft to W and 800 ft to S line; F. W. Watson 4, sec 25 TP Ry sur, 300 ft to N and 500 ft to W line.

Roberts County—Caledonia Pet. Co.'s J. T. Garrison 1, W. A. Corder sur, 175 ft to N and 1000 ft to E line.

Shackelford County—Biggs & Ferguson's Elliott Bros. 1, Insane Asy sur, sec 13, 150 ft to S and E lines. J. L. Sarver's N. Clawson 2, Univ Lands sur, sec 102, 150 ft to S and W lines. H. H. Curtis' T. E. Hayden 1, Univ Lands sur, sec 114, 450 ft to N and 300 ft to E line. A. Bandrick's Fee 1, Insane Asy sur, sec 4, 1020 ft to N and 1200 ft to W line. A. G. Ilseng's Webb Bros. 1, Univ Lands sur, sec 68, 450 ft to N and 150 ft to W line. Cleve Callaway's Rhomus 2, Insane Asy sur, blk 66, 150 ft to S and E lines. Hilld & Jones' America Missouri Leach et al 1, Insane Asy sur, 150 ft to S and E lines.

Stephens County—Republic Prod. Co.'s M. C. Knox 4, sec 5, TP Ry sur, 300 ft to S and E lines. Texas Fidelity Oil Corp.'s J. M. Parks 1, TP Ry sur, sec 41, 300 ft to N and W lines. Republic Prod. Co.'s M. C. Kox 4, TP Ry sur, sec 10, 300 ft to S and W lines. W. H. Sanders' M. I. Lassiter 1, TP Ry sur, sec 46, 1080 ft to E and 350 ft to N line.

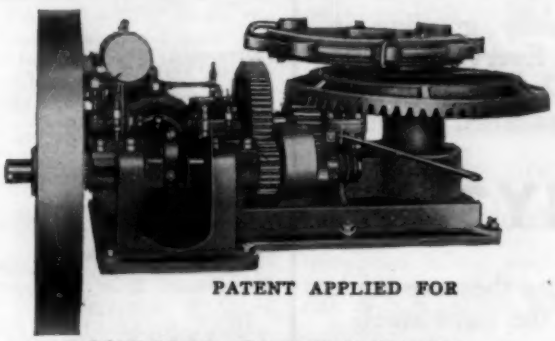
Wichita County—Inman-Smith Oil Co.'s J. T. Overly 1, T. C. S. L., blk 17, 340 ft to W and 375 ft to S line. Perkins & Cullum's F. A. Sanders 3, Specht Col sur, blk 3, 322 ft W No. 1. B. M. Griswold's T. F. Mitchell 1, P. Castleman sur, 150 ft to N and E lines. R. I. Carter's Kemp & Kempner 1, J. M. Tigert sur, blk 53, 560 ft to S and 150 ft to W line. Magnolia Pet. Co.'s P. Waggoner 2, H&TC Ry sur, sec 33, NW cor. Radio Oil Corp.'s W. T. Waggoner 6, A. Gibson sur. A. T. Wolfe's J. A. Kemp 1, W. V. F. L., 300 ft W No. 9. Hobbs Bros.' Mrs. E. A. Yarbrough 24, H&TC Ry sur, sec 29, 300 ft S No. 23. Sooner Oil Assn's T. W. Roberts 10, H&GN Ry sur, 300 ft N No. 8. Texhoma Oil & Ref. Co.'s W. T. Waggoner 27A, H&TC Ry sur, sec 34.

Webb County—Clark & Howard's Puig Bros. 1, A. L. Edgington sur, 150 ft to N and 400 ft to E line.

Young County—W. H. Sanders' W. J. Logan 1, TE&L Ry sur No. 70, 150 ft to N and 450 1, TE&I Ry sur No. 70, 150 ft to N and 450 ft to W line.

TEXHOMA EXTENDS LINE

Wichita Falls, Texas, Dec. 11.—The Texhoma Oil and Refining Company has completed an extension from its main Archer County pump station on the W. H. Taylor tract in the upper end of the Texhoma-Gose pool, to the recently developed Wilmut-Wilson pool where Texhoma has contracted for daily runs from independent producers. This line is slightly less than 10 miles in length, and four inch pipe was used. A booster station is being erected in section 22 on the Wilson tract.



PATENT APPLIED FOR

"THE SPENCE"

A combined gas engine and single eccentric pumping power with a 10½ H. P. gas engine, positive governor, gravity feed lubrication and wico ignition for gas or gasoline equipment.

This power has been pronounced by some of our largest producers as one of the best pumping units on the market for wells in territory of medium depth.

Manufactured and sold by

H. M. SPENCE

PARKERSBURG, W. Va.

TRADE MARK KEYSTONE REGISTERED U. S. PATENT OFFICE

Improved Deep Well Rig

EMBODIES THESE VALUABLE FEATURES

Friction Tool Hoist—Casing Reel—Indestructible Steel Sills—Keystone Patented Spudding Device—V-Friction Brakes, Patented—Babbitted Bearings throughout.

This machine is new—modern, complete, the product of an old and established concern. It is backed by 35 years of experience in the manufacture of portable drilling rigs and a world-wide reputation.

We are building three sizes: No. 27, for 2500 feet; No. 32, for 3000 feet; and No. 35, for 3500 feet depth.

Machines can be seen in various parts of the Kansas, Oklahoma and Pennsylvania fields. Let us wire you where to find one. BULLETIN 302 and prices on request.

KEYSTONE DRILLER CO.

BEAVER FALLS, PA.

Branch Office and Plant

Joplin, Mo.

LUCEY

CHROME FISH TAIL BITS

Are steadily growing in favor. Every user of Lucey Chrome Fish Tail Bits is a satisfied customer

WHY?

1. Because they are made from the right steel.
2. Because they are forged at the right temperature under scientific control.
3. Because they are properly proportioned.
4. Because they are properly machined.
5. Because they reduce your cost of Fish Tail Bits per foot of hole drilled.

Send for Bulletin H-1.

"Wherever LUCEY There's Oil"

R. U. CULBERSON, Receiver

Lucey Manufacturing Corporation of Texas

Houston, Texas

Beaumont, Texas — El Dorado, Ark.
Smackover, Ark. — Corsicana, Texas
Shreveport, La. — Mexia, Texas
Dallas, Texas

STEEL

PRODUCTION BY STATES

The figures given below for the States east of California, compiled from reports made by pipe-line and other companies to the Geological Survey, show the quantity of petroleum transported from producing properties. Petroleum consumed on the leases and produced but not transported from the producing properties is not included. These items are given in the final annual statistics, which show gross production—all the oil brought to the surface. The figures for California are those reported by the Pacific Coast office of the American Petroleum Institute and show gross production. Figures for 1923 are subject to revision, those for 1922 are final and include oil consumed on the leases and net increase of producers' stocks.

(Barrels of 42 U. S. Gallons)

	September, 1923		October, 1923			
State—	Total	Daily average	Total	Daily average	Jan.-Oct., 1923	Jan.-Oct., 1922
Arkansas	3,350,000	111,666	3,046,000	98,258	29,176,000	10,008,000
California	25,763,000	858,750	24,576,000	792,787	219,431,000	109,259,000
Colorado	5,500	183	5,200	168	56,800	81,900
Illinois	696,000	23,200	733,000	23,645	7,331,000	7,928,000
Indiana:						
Southwestern	63,000	2,100	64,000	2,065	671,000	709,000
Northeastern	24,000	800	28,000	903	215,000	203,000
Total Indiana	87,000	2,900	92,000	2,968	886,000	912,000
Kansas	1,836,000	61,200	2,166,000	69,871	23,461,000	26,781,000
Kentucky	670,700	22,357	686,400	22,142	6,806,600	7,571,800
Louisiana:						
Gulf Coast	194,000	6,467	187,000	6,032	1,892,000	1,408,000
Rest of State	1,661,000	55,367	1,674,000	54,000	18,845,000	28,774,000
Total Louisiana	1,855,000	61,834	1,861,000	60,032	20,737,000	30,182,000
Montana	256,000	8,533	192,000	6,194	2,245,000	1,960,000
New York	140,000	4,666	115,000	3,710	1,034,000	835,000
Ohio:						
Central and Eastern	403,000	13,433	435,000	14,032	4,116,000	3,962,000
Northwestern	182,000	6,067	190,000	6,129	1,818,000	1,711,000
Total Ohio	585,000	19,500	625,000	20,161	5,934,000	5,673,000
Oklahoma:						
Osage County	2,783,000	92,766	2,564,000	82,710	32,199,000	30,829,000
Rest of State	8,765,000	292,184	8,891,000	286,793	102,666,000	92,653,000
Total Oklahoma	11,548,000	384,950	11,455,000	369,503	134,865,000	123,482,000
Pennsylvania	569,000	18,967	632,000	20,387	6,145,000	6,199,000
Tennessee	300	10	600	19	6,400	8,200
Texas:						
Gulf Coast	2,416,000	80,533	2,348,000	75,742	25,049,000	29,348,000
Rest of State	9,871,000	329,034	12,555,000	405,000	75,397,000	71,618,000
Total Texas	12,287,000	409,567	14,903,000	480,742	100,446,000	100,966,000
West Virginia	510,000	17,000	579,000	18,678	5,423,000	5,899,000
Wyoming:						
Salt Creek	3,481,000	116,034	3,268,000	105,419	28,247,000	14,836,000
Rest of State	712,500	23,750	741,800	23,929	6,579,200	6,270,100
Total Wyoming	4,193,500	139,784	4,009,800	129,348	34,826,200	21,106,100
	64,352,000	2,145,067	65,677,000	2,118,613	598,210,000	458,852,000

PIPE-LINE AND TANK-FARM STOCKS OF CRUDE PETROLEUM ON LAST DAY OF MONTH (Barrels)

Stocks are reported by field of origin of oil not by location of storage

Domestic Petroleum East of California: Gross and net pipe-line and tank-farm stocks:	Sept. 30 1923	Oct. 31, 1923	Oct. 31, 1922
Appalachian:			
N. Y., Pa., W. Va., Eastern & Central Ohio, Gross	6,443,000	6,611,000	6,215,000
Net	6,150,000	6,333,000	5,950,000
Kentucky, Gross	3,193,000	3,144,000	3,019,000
Net	3,063,000	3,011,000	2,904,000
Lima-Indina, Gross	1,097,000	1,137,000	931,000
Net	861,000	901,000	676,000
Illinois-S. W. Indiana, Gross	11,726,000	11,942,000	10,353,000
Net	11,290,000	11,494,000	9,852,000
Mid-Continent:			
Okla., Kans., Cent. & North Texas, Gross	171,905,000	175,355,000	148,410,000
Net	160,756,000	164,070,000	137,545,000
Northern Louisiana and Arkansas, Gross	29,770,000	30,483,000	15,897,000
Net	28,086,000	28,913,000	15,266,000
Gulf Coast: Gross	24,637,000	24,946,000	26,800,000
Net	24,227,000	24,598,000	25,071,000
Rocky Mountain: Gross	13,197,000	14,828,000	1,630,000
Net	13,187,000	14,819,000	1,620,000
Total pipe-line and tank-farm stocks east of California: Gross	261,968,000	268,446,000	213,255,000
Net	247,620,000	254,139,000	198,884,000
California (as stated above)	58,836,000	60,127,000	47,741,000
Imported crude petroleum held in the U. S. by importers elsewhere than at refineries:			
At Atlantic Coast stations	200,000	260,000	*
At Gulf Coast Stations	552,000	830,000	*
	752,000	1,090,000	
Total domestic net pipe-line and tank-farm stocks east of California; producers', pipe-line, and tank-farm stocks in California, plus stocks of imported crude petroleum held in the U. S. by importers elsewhere than at refineries	307,208,000	315,356,000	*

*Not available.

DAYS' SUPPLY OF PIPE-LINE AND TANK-FARM STOCKS

(Based on monthly rate of deliveries of crude petroleum to consumers)

August, 1923	September, 1923	October, 1923
148	152	155

Oklahoma Production Decline Due to Burbank; Shut Down Will Continue for Another Month

Tulsa, Okla., Dec. 12.—Oklahoma production figures show a decrease of 5855 barrels for the week but most of this decrease is charged against one field, Burbank, which means that Oklahoma has no reason to be alarmed for her new fields will more than offset this loss in a short time. Wewoka alone is producing 15,000 barrels from only 18 wells and oil producers are of the opinion that the pool has hardly been scratched.

Thomas B. Slick's No. 1 Mingo in Seminole County, has been completed as a gas well making 12,000,000 cubic feet. This well has been the center of interest for several days. The bit went through a cap rock at 2218 feet and encountered a sand from which a tremendous gas flow immediately came forth. This well is located in the northwest of the northeast of section 25-5-6, and is not far distant from wells being drilled by William McDougall in 20-6-7, which now look very promising.

Kingwood Oil Company continues to drill their well in section 7-7-10, in Hughes County. This well is now well past the 5000 foot mark and is the deepest well now being drilled in Oklahoma.

Link Oil Corporation successfully completed their Sary Okishe No. 1 well in Okfuskee County for an initial flow of 800 barrels. The sand was topped at 3469 feet and the bottom of the hole registers a total depth of 3484 feet. Test of the oil shows that it is 37 gravity. Link Oil Corporation's No. 1 is located in the southeast corner of the southwest of section 1-13-8.

Simpson-Fell has added 700 barrels of production to the Hewitt pool by completing their Hazel Vorhees No. 2-A in the southeast of the northeast of section 9-1s-2w. The well is 2060 feet deep with the sand topped at 2011 feet

In Creek County, D. B. Mason's Wilson No. 3 came in for 20,000,000 feet of gas and 600 barrels of oil per day. With this added production to the Bristow district, that section is managing to hold its own on the production tables. The well is in the Dutcher sand at 3114 feet and the location is shown in the center of the east line of the southeast of the northwest of section 23-16-8.

The Ostot Development Company and Polling well known as the U. S. Smelter No. 1, extended the Blackwell pool a quarter of a mile when it came in for a flow of 50 barrels. The well is 3475 feet deep. The well is in the northwest of the northeast of the southwest of section 15-21-1 west.

After finishing a difficult fishing job, brought about by shooting a part of the casing off, the Carter Oil Company well in the Wilhoit pool came in flowing at the rate of 250 barrels per day. The well is shown as the Haley No. 1 and is located in the southwest of the southeast of the southeast of section 5-9-10.

Although a fair showing of oil was encountered in the Howell No. 1 well owned by the Day Oil Company and the Ossie Oil Company at 2424 feet, the well is not a commercial producer and drilling has been resumed. The well is located in Pottawatomie County in section 13-10-2, and is drawing much attention.

The Oklahoma Natural Gas Company well in section 24-16-12, which was completed last week for an initial flow of 2400 barrels, is now making 3360 barrels per day. The Texas Company is receiving the oil. This well is in the above section in the northwest corner of the southwest of the southwest in Creek County.

In the Cushing field, the Magnolia Petroleum Company has completed a small well in the southwest of the southwest of the northwest of section 16-20-6, in Pawnee County. The well is known as the Baker No. 4, and was shot at 2854 feet, at which depth the well started to produce.

The Sinclair refinery at Cushing has resumed operations after being shut down for 90 days.

The Burbank shut down plan, which has been discussed so much since its inauguration, comes into the limelight again this week when the operators in that field held their meeting and decided to continue the plan for another 30 days. All wells which have been started during the past 10 days will be immediately shut down, according to a statement made by J. R. McGinley, secretary of the committee.

The decision in favor of the plan was the unanimous vote of every operator present and practically every drilling company in the Burbank pool was represented.

The next meeting of the committee will be held on January 10, at which time the question of continuing to retard rather than to increase drilling activities will again come before the meeting. It is thought that there may be a few changes in the plan at that time, but no definite information as to these changes is available at the present time.

Kansas Drilling Activities More Widespread Than Ever in History; Two Wildcats Showing

Wichita, Kans., Dec. 12.—The Valerious Oil Company's well in Russell County and the Champlin Refining Company's well in Hitchcock County, widely separated wildcats and both showing for production, are the principle items of interest in Kansas development for the week.

The Russell County well is 100 miles from production, the only well drilling in the entire county; the Hitchcock well is just southwest of here.

According to a statement made by an official of the Wilcox Oil and Gas Company, of which the Valerius Company is a subsidiary, the well in Russell County is expected to make at least 200 barrels per day. However, this is only an estimate. Accurate figures can not be made until the well is drilled in, which will be done just as soon as adequate tankage is erected. The well is located in the southwest corner of the southeast of section 8-12n-15w, and has been drilled to 3003 feet. Twenty-five hundred barrels of oil is standing in the hole according to reports.

The Champlin Refining well near Peck is 3600 feet deep. A strong gas pressure is coming from the well and 2500 feet of fluid is standing in the hole. Casing in the well only runs to the 3250 foot level and much trouble has occurred from cave-ins in the open hole. The drillers are having considerable difficulty in cleaning the hole. The well is located in section 20-30-1 west, about 20 miles south of here; 15 miles south and five miles west of Friends University.

Allison and Fitzwilliams, contractors on the Hitchcock well, are preparing to start a test four miles south and a mile east of the well which they have successfully completed for the Champlin interests. They do not own any part of the Hitchcock well, but since the completion have decided to drill a well on a block of acreage which they hold.

In Greenwood County the Magnolia Company has brought in a 10,000,000 foot gas well at 1095 feet. The well is located in the northeast corner of the northwest of the southeast of section 29-26-9, on the Witty farm.

A block of 4000 acres has been gotten together by the Amerada Petroleum Corporation in Marion County and a location is about to be made on the block. Core drilling, which has been used so extensively by the Roxana, is being employed by the Amerada to determine the location for the well.

In Elk County, Mitchell et al have completed a well for a flow of a million feet of gas at a depth of 1518 feet. The well is known as the Perkins No. 1, and is located in the southwest of the southeast of section 33-29-9.

Kansas drilling operations are more wide-spread now than ever before in the history of the state.

REED-YOST
Anchor Dump Valve

This D & B fitting, like D & B pumps, is "quality first".

It keeps the gas anchor free from sand accumulations which would choke the anchor pipe—saving pulling to clean gas anchor.

If your local supply house can not supply you, wire us direct.

D & B Pump and Supply Co.
301 W. Ave. 26, Los Angeles, Calif.
Factory Branch, Dallas, Texas

Corsicana-Powell Production Drops to Level Indicated for Settled Production Under Pumps

Corsicana, Texas, Dec. 11.—Having slumped to approximately 105,000 barrels daily in actual production early this week, the Corsicana-Powell field is nearing the level that is expected to be maintained as settled production in the field when pumping equipment is installed on the wells that have recently ceased to flow. The work of placing these wells on the pump is being pushed by the operators without delay as precaution against water damaging the Woodbine sand pay, while many of the holes are being plugged to the water level to protect the sand.

Completions made in the field during the past seven day period included only a small number of flowing wells, which are located mostly along the west line of the structure, and on the opposite side from the worst water trouble. This west edge of the structure is expected to contribute a number of additional completions, as it is adjacent to the fault and the producing area extends out irregularly for the full length of the structure.

Statistics compiled on the Corsicana-Powell field on December 1 credited it with having a total of 544 producing wells that were making 146,115 barrels on that particular date, or an average of about 269 barrels per well, while on the same date the Mexia field proper reported a daily production of 38,385 barrels from 520 wells, which were averaging nearly 74 barrels per well. In the Mexia field the Humphreys (Pure) Oil Company was credited with 240 of the producing wells, while Humble Oil and Refining Company had 165 of the total number of producing wells in the Corsicana-Powell field. Both of these fields obtained production from the Woodbine sand pay, and proved to be of approximately the same area, while almost the same number of tests were drilled, although a number of the Mexia wells have been plugged and abandoned in the past 18 months.

The Humble Oil and Refining Company produced approximately 2,712,000 barrels during the month of November, making its total production in the field up to December about 8,657,000 barrels, while the production of all the companies in the Corsicana-Powell field during the month of November aggregated 8,211,800 barrels of oil. The total output of the field from the date of the discovery well to December 1 has been placed at 27,173,000 barrels.

A salt water well was developed by the Western Oil Fields (Mutual) Corporation on the west line of the southwest end of the field early this week when its Boyd-Howell 7 filled with water after drilling Woodbine sand at 2388-2940 feet. This test is the third location from the northeast corner on the north line of the lease, and caused a flowing offset producer to start going to water at a rapid rate. The producer has been shut in until the water can be plugged off in No. 7. It is reported that this salt water well will be plugged back to the 1700 foot sand to test out a good showing of oil and gas reported while drilling for the deeper pay. Other wells in this immediate vicinity have recently encountered water trouble but it was thought that they were carried too deep, as was the case with Yoder and others on the Harvard tract, which drilled more than 100 feet of sand to a total depth of 2970 feet.

Heavy rains during the forepart of this week have severely handicapped field operations, making the roads to and in the fields almost impassable. Early Monday morning lightning set fire to flow tanks on the I. T. Kent and L. T. Davis leases in the field, but the damage was confined to the two tanks ignited.

CORSICANA

Corsicana, Texas, Dec. 12.—The daily average production of the field for the past week was divided as follows:

	Barrels
Humble Oil & Ref. Co.	35,500
Gulf Prod. Co.	14,000
Skelly Oil Co.	12,200
Atlantic Oil Prod. Co.	10,500
Simms Oil Co.	10,400
Humphreys Oil Co.	9,800
Tidal Oil Co.	9,100
E. L. Smith Oil Co.	6,400
Mutual Oil Co.	5,200
Roxana Pet. Corp.	4,500
Kirby Pet. Co.	2,775
Witherspoon Oil Co.	2,200
Texas-Magnolia	1,975
R. E. Brooks, Jr.	1,900
McMann Oil Co.	1,810
Garland F. Kent et al	1,800
J. K. Hughes Dev. Co.	1,775
Texas Co.	850
Barclay & Meadows	750
Elliott et al	620
Sun Company	550
Mitchell & Jones	475
U. S. Tex Oil Corp	450
Simms-Fox-Tucker	305
New Domain Oil Co.	300
Galloway-Bass et al	210
Collins & Wheelock	175
Dick Webster et al	90
T. F. Hunter et al	90
Empire Oil & Gas Co.	75
Cosden Oil & Gas Co.	50
Total	135,850
Last week	222,400

Corsicana-Powell
Drilling Report

Atlantic Oil Producing Co.'s Goldman 1, dr 2800 ft; W. S. Kellum 8, dr new hole 900 ft; Kellum 9, dr 2345 ft; Kellum 10, dr 1390 ft; Kellum 11, dr 910 ft; Kellum 12, dk.

R. E. Brooks et al's I. N. Cerf 4, completing 2972 ft; Cerf 5, completing 2825 ft. Barkley & Meadows' I. N. Cerf 2, dr 2810 ft.

Cranfill Bros. & Penn's Reid 1, dr 745 ft.

Elliott et al's Hill Tank Farm 2, dr 2265 ft.

Findley, Kyser et al's I. J. Kyser 1, bailing 3002 ft.

Gulf Prod. Co.'s O. C. Barron 6, completing 2985 ft; Barron 7, completing 2976 ft; E. Blumrosen 4, rigging up; H. B. Boyd 1, sd 2988 ft; J. B. Bush 3, dk; M. A. Crews 17, dr 1200 ft. Galloway Oil Interests' J. R. Gentry 3, sd 2936 ft.

Humble Oil & Refining Co.'s I. N. Cerf 7-A, fsh 2565 ft; Cerf 8-A, completing 2851 ft! Cerf 9-A, completing 2852 ft; Cerf 10-A, completing 2845 ft; Cerf 4-B, cemented cas 2880 ft; Cerf 5-B, dr 2300 ft; M. A. Crews 9, dr 2410 ft; R. D. Flemming 8-A, completing 2962 ft; Hill Tank Farm 1, completing 2867 ft; Hill Tank Farm 2, dr 1740 ft; S. D. Ramsey 14-B, dr 1545 ft; L. W. Pugh-Walker 4, fsh in pay 2907 ft.

J. K. Hughes Dev. Co.'s P. H. Alexander 2, completing 2915 ft; Alexander 3, dr 2535 ft; Alexander 4, completing 2963 ft; Alexander 5, dr 990 ft. Hoosier et al's Hill 1, dr 2730 ft. Humphreys (Pure) Oil Co.'s W. J. McKie 54, co 2942 ft; McKie 59, sd 2905 ft.

Gilbert Johnson et al's B. W. Harvard 1, tubing to pump 2960 ft; Harvard 2, dr 2685 ft; Harvard 3, rigging up; Harvard 4, dr 2205 ft.

Garland H. Kent's R. D. Flemming 7, completing 2923 ft; Flemming 9, dr 2800 ft; Flemming 10, completing 2960 ft; Flemming 12, std to complete 2860 ft; Flemming 13, sd 2952 ft; Flemming 14, sd 560 ft; Flemming 17, dr 2205 ft; Flemming 18, cemented cas 2900 ft; Flemming 20, setting liner 2885 ft.

Monty N. Lenore et al's R. D. Flemming 1, completing 2890 ft; Flemming 2, cemented cas 2835 ft.

McDonald Bros.' Dr. A. N. Brown 1, standardizing to complete 2948 ft. E. C. Mead et al's W. N. Smith 1, sd for cas 3000 ft. McIntyre et al's K. Wollens 1, dr 2800 ft. Miller & Lewis' Swink 1, testing 2820 ft. J. B. Mahon et al's Holmes 1, dr 600 ft; J. E. Christian 1, dr 1660 ft. Magnolia Pet. Co. & Texas Co.'s I. T. Kent 16, dr 2615 ft. McMan Oil & Gas Co.'s Chapman-Broyles 10, dk; Chapman-Broyles 11, completing 2850 ft; Chapman-Anderson 6, completing 2850 ft; Chapman-Anderson 7, dr 2800 ft. Mills Bennett's K. Wollens 1, dr 1900 ft.

O'Bern et al's K. Wollens 1, dr 2860 ft.

W. H. Parker et al's I. N. Cerf 2-A, dr 2850 ft; Cerf 1-B, dr 1905 ft.

Reeves & Jackson's K. Wollens 1, dr 2715 ft.

Simms Oil Co.'s H. B. Boyd 4, dk; J. A. Boyd 2, bailing oil and water, td 2982 ft; Boyd 3, dk; Boyd 4, dr 2215 ft; R. H. Boyd 2 and 3, rigging up; W. S. Kellum 1, completing 2920 ft; Kellum 2, dr 950 ft; Kellum 3, dr 1740 ft; J. T. Rose 5, dr 2475 ft; Rose 6, dr 2600 ft; Rose 7, dr 1460 ft; Rose 8, dr 2060 ft; Rose 9, dk for shallow gas. Smith Oil Co.'s I. N. Cerf 1, dr 2205 ft; Keith-Wheelock 8, std to complete 2970 ft; Keith-Wheelock 9, dk. Strube & Strube's Hill 1, dr 1945 ft.

S. J. Taylor et al's Jackson 1, top chalk 2565 ft, dr 2700 ft. Terrell Production Co.'s W. C. Humphries 1, completing 2946 ft. The Texas Co.'s M. Autry 1, top chalk 2201 ft, dr 2650 ft. Tidal & Buttram's Bressie Tank Farm 2, dk T. & B. V. Ry Co. et al's Right of Way 3, dr 2840 ft; Right of Way 4, dk; Right of Way 5, top chalk 2425 ft, dr 2500 ft.

Western Oil Field Corp.'s (Mutual) Boyd-Howell 7, cemented cas 2880 ft; Boyd-Howell 8, dr 900 ft; Boyd-Howell 9, dk. Webster & Pickens' Boyd 1, std after plugging back from 2985 ft. Witherspoon & McMan's Chapman 1, dr 2780 ft; Chapman-Broyles 10, dr 2790 ft; Springfield 1, sd 2750 ft.

Yoder et al's B. W. Harvard 2, chalk 2520-2638 ft, dr 2860 ft; Harvard 3, spudding.

5000 Barrel Well Adds Territory to La Palma

Tampico, Tamps., Dec. 7.—Much territory has been added to the proven area of La Palma sector of Cacalilao through the completion Thursday of a 5000 barrel producer in Well No. 3, fraction 4 of lot 1 on the Rich-Mex lease, from a depth of 1965 feet. The importance given the well is not in its size, but the fact that it is half a kilo from other production and considerable distance away from the line of previous production. The well is the property of Gerald Tombrey.

This well forms a triangle with other producing points and its completion as a producer is taken as indication that the producing area is wide and long, and is almost certain to stimulate drilling.

Drilling Operations Show Increase in North And Central West Texas; Archer Most Active

Wichita Falls, Texas, Dec. 11.—Drilling operations have registered a steady increase in numbers throughout the North and Central West Texas district oil fields since the crude oil purchasing agencies began soliciting new connections during the latter part of November. The greatest amount of this new activity is taking place in Archer County, where a series of small pools is being developed from sands ranging in depth from 1400 to 1800 feet that afford crude testing 40 gravity and above. Leasing of wildcat acreage in Archer County has been renewed on a large scale recently, with interest centered in the east central part of the county, and on the outskirts of the Sunshine, Peterson and Wilmut-Wilson pools. Prices on this wildcat and semi-wildcat acreage range from $10 to $40 per acre, with the latter figure applying on leases adjacent to wildcat tests being drilled. Drilling in Wichita and Young Counties has picked up during the past two weeks, while Stephens and Eastland Counties in Central West Texas report a number of new tests getting under way as a result of the encouraging indications of a raise in the posted price of crude shortly after the first of the year.

Independent oil companies and individuals are setting the pace on operations in Archer County, while only a few of the major companies have leases in the producing areas. Completion of three flowing wells earlier this month with an initial production of about 1000 barrels from the 1600 foot sand has resulted in a number of new locations being made on adjoining leases, while during the past week more than 1200 barrels of new production was added from 15 wells. Hardeyeste & Jeffrey's wildcat test on the W. F. Parish land, which encountered an oil sand at 1606-08 feet, several weeks ago and gave promise of extending the Wilmut-Wilson pool about a mile to the east, is standardizing to complete with about 500 feet of oil in the hole. It is in the Southern Pacific survey 2, A-1210, and is to be placed on the pump when standardized.

T. O. Shappell and others' test on the J. L. Jackson lease, located in section 23 a short distance north of the Wichita-Archer County line, above the town of Holliday, was bailed down about 500 feet early this week after drilling into a sand at 1814-17 feet and showed lots of oil and gas. Since no storage or pipe line connections had been completed at the well, bailing was halted and a control head placed on the casing until tanks could be erected. This well is located slightly less than two miles due east of the fair sized pumper completed last October by Stedham & Thrasher on the A. Daume land from sand at 1824 to 1828 feet. Since there are no deep dry holes in between these two tests, it is possible that a producing area of some size exists.

The Petrolia field in Clay County added another gasser last week when the Lost Star Gas Company's Panhandle 7 registered an initial flow of 3,000,000 cubic feet with a rock pressure of 600 pounds at 1729-31 feet. Gas from this field is being used by the government to manufacture helium at Fort Worth.

The Pioneer field in Central West Texas added another oil producer last week on the west extension of the proven area in Callahan County contributed a 360 barrel well from lime pay at 2453-2505 feet. This well was drilled by the Pennant Oil and Gas Company on the Albin-Webb tract. Several other tests have been started recently in this particular section of the Pioneer field.

Gardner to Leave Gulf Company on January 1

Fort Worth, Texas, Dec. 11.—J. Alvin Gardner, first assistant to the vice president in charge of the Gulf Production Company's district offices here, has tendered his resignation to become effective January 1, to enter the oil producing business for himself. Gardner has announced that he proposes to return to Wichita Falls and become associated with a group of men that have producing properties in Wichita and Archer Counties.

Mr. Gardner is one of the veteran employes of the Gulf Production Company, having completed nearly 16 years of continuous service with the Gulf interests. He went with the company in the early spring of 1908 when it was operating as the J. M. Guffey Petroleum Company with Beaumont as headquarters, and his first duties were those of a stenographer. In 1909 he was transferred to Shreveport district offices and later served the Gulf interests in Mexico. During this time he worked in the various departments of the company, and had resumed his duties at Shreveport only a short period before being transferred to Fort Worth to become an official in the North Texas district offices. During the "boom days" of Burkburnett he was placed in charge of the branch office at Wichita Falls. In the latter part of 1921 the North Texas district offices of the Gulf were removed to Wichita Falls, and when returned to Fort Worth a year later, Mr. Gardner was also transferred as the first assistant to W. B. Pyron, vice president in charge of the district offices.

Seguin New Center of Much Wildcat Activity

Luling, Texas, Dec. 12.—Chief interest in the Luling field at this time is centered on several wildcat tests across the San Marcos river in Guadalupe County some distance from the proven field at Luling. There are six tests under way and several more are in prospect.

A week of muddy weather in the Luling field making the roads hard to navigate materially cut down activity in the field. Most of the operators are holding work at a minimum until after the holidays. Much of the oil is running into storage and a majority of the wells are pinched in.

One of the pleasing features of the Luling pool which is now about one and a half years old, is that few pumps are in evidence. Most of the producers are still making heads and flowing the oil about as well as when they were first brought in. There has been a lessening of gas in some of the wells but in the majority of cases they bid fair to produce by flowing for many months to come. There were no completions of prominence during the week.

OIL MAN FOR SENATOR

Okmulgee, Okla., Dec. 10.—W. B. Pine, oil operator, manufacturer and well known in Mid-Continent oil circles, will seek the Republican nomination for United States senator from Oklahoma, it is understood here.

Wildcat North and West of Carolina Tex Wells at Mirando Showing Oil and Gas

Mirando City, Texas, Dec. 12.—Another Webb County wildcat is attracting attention from operators and scouts this week. It is the Morgan Gibble No. 1, survey 335, about one mile north and a little west of the Carolina Texas gassers. This well is down about 2000 feet and is expected to pick up the gas found in the first four wells of the Carolina Texas on the Barnsley ranch. The surface elevation on this location is about 35 feet higher than on the Barnsley ranch. It is hoped to pick up less gas and more oil here.

At 1948 feet shale and sand showed gas and at 1966 there was some oil in a core taken in a sand. These strata were capped with gumbo. This conforms in general to the logs of the Carolina Texas gassers. Coring is being done regularly as the drill proceeds.

The Nueva Oil Company's No. 1, block 50, Los Ojuelos grant in Webb County, came in last week for 60 barrels. It is another well east of the escarpment. The Magnolia Petroleum Company's No. 17, south line of block 2, Los Ojuelos grant, was completed last week and is now swabbing around 75 barrels. It got the oil at 1723 feet.

Killam et al plan a test for light oil in the north end of the Schott pool and tools are being set up on Noret No. 3, southwest corner of Survey 2253, for this test. R. F. Duggan, trustee, will also drill an interesting test for light oil on Survey 1100 in Webb County, about two miles north of Oilton.

Black Panther Petroleum Company has given a contract for four wells to Bill Allen on its Aviator pool lease. Derrick for No. 5 is being built. It will offset the No. 4 and Laurel Oil Company's No. 2.

Oil shipments for November totaled 470 carloads or about 85 less than October. This is due entirely to restricted output and not due to any slump in the production of the wells. The oil market has been unfavorable and operators are not marketing any more oil than necessary. Some recent completions have not even been pumped.

Webster Parish Well Thought to Be on New Structure—Flows Some Oil and Gas

Shreveport, La., Dec. 10.—The "mystery well" at Cotton Valley, otherwise known as the Oil Fields Gas Company's No. 1 Merritt, in section 14-21-10, of Webster Parish, was opened up and turned into the Palmer Corporation's trunk gas line yesterday. According to reports, it made one or two good sized heads and delivered so much oil into the gas line that it had to be shut in again. This well is located on acreage obtained by the Oil Fields Gas Company from the Louisiana Oil Refining Corporation under a drilling contract providing that a resulting gas well should belong to the former and an oil well to the latter; and, for this reason, it is now assumed that it will remain shut in until completion of adjustments between the two companies interested.

This test is thought to be located on a structure separate and apart from that on which the Gleason, Shongaloo, and Sarepta drilling was done. It is about 12 miles west of the Homer field, approximately the same distance northeast of the Bellevue field, and about 16 miles southwest of the Haynesville field.

The Oil Fields Gas Company is drilling in lime rock, topped at 1980 feet, in its No. A-1 Hope, in section 13-21-10, on the same structure. John Y. Snyder has built a derrick for his No. 2 Hodges, in section 15 of the same township. O'Brien et al's are drillng at 300 feet in their Doles 1, in section 26-21-9, located about midway between the Cotton Valley structure and the Homer field. These, in connection with several other tests in immediate prospect, assure that the Cotton Valley area will be tested promptly and thoroughly.

The Union Parish Drilling Syndicate is said to have bailed dry again in its second test, made last week at 2287 feet, in its No. 3 fee, in section 17-23-1e, of the Oakland area, in Union Parish. Preparations are being made to drill deeper. Clark and Woodward have begun drilling and set surface casing in their No. 1 Clark, in section 17-23-2e. The McCauldin Syndicate has erected a derrick in section 36-21-1e, about five miles southeast of Farmerville and the Ohio Oil Company is building a derrick on its location recently made on the Dubach Lumber Company's property, in section 15-20-1w. Davidson and Palmer are drilling below 800 feet in their No. 1 Green, section 19-23-1e; and the Empire Gas & Fuel Company is drilling at 2,655 feet in its No. 1 Hamilton, in section 30-19-13.

The Standard Oil Company has abandoned its No. 1 Scott, one of a series of tests made on its large block of leases said to embrace a structure in the vicinity of Heflin, in Bienville and Webster Parishes. A location has been made by this company for another test to be drilled on the Woodward & Walker land, in the northeast quarter of section 16-17-8. The well just completed and abandoned is located in section 21 of this same township.

Palmer & Blount are shut down for fuel at 455 feet, after having tested fresh water at 318 feet in their Anders wildcat, in section 6-18-10, of Webster Parish, southeast of the Bellevue field.

George O. Baird and others of Shreveport have set six inch casing for a test to be made at approximately 800 feet in their No. 2 Montgomery, in section 18-16-11 of the Elm Grove territory.

Brewer & Sewall are fishing for liner, preparatory to drilling deeper after a dry test at 2410 feet in their No. 1 Sharp, in section 15-18-16, of Caddo Parish, about 12 miles west of Shreveport. The Crude Oil Company has begun drilling and set surface casing in its Alexander & Ledbetter wildcat in section 27-16-14, near Keithville.

Louann Section Active District in Louisiana

El Dorado, Ark., Dec. 10.—Practically all of last week's completions in the Smackover field were from the 2200 to 2300 foot sand, and were located in the Louann sector, in township 15-16. They ranged from 40 barrels up to 400 barrels in initial production and none were of special interest.

J. C. Foster and associates have built a derrick in the northeast corner of the southwest quarter of the southeast quarter of section 32-11-19, near Yellow Pine and Sayre, in the northwest corner of Ouachita County. The Gulf Refining Company's Dawson wildcat, in section 10-15-18, of Ouachita County, about seven miles northeast of the town of Stephens, and about eight miles beyond the nearest production in that field, was pulled and abandoned last week as dry at 3017 feet. The Pure Oil Company has a fishing job at 2415 feet in its Moline Timber Company test, in section 21-11-17. The Hopkins Syndicate has resumed drilling and penetrated 30 feet into a hard lime rock topped at 2025 feet in its No. 1 Allen & Curry, a wildcat located in section 33-14-19, about four miles north of the town of Stephens.

The Harrell Trust is coring at 2435 feet in its No. 1 Steele, in section 11-19-12 of Union County, and Starke et al are drilling below 2000 feet in their No. 1 Little, which is located in the same township. Garrett et al bailed dry at 2222 feet last week in their No. 1 Robinson, in section 33-18-14. The Federal Petroleum Company is drilling at 3065 feet in its No. 2 Union Saw Mill Company in section 28-17-12.

Conway and others are drilling at around 1800 feet in their No. 1 Riggs-Matlock in section 33-8-15, of Dallas County.

Rhodes and others have lost the hole and are skidding over to start anew on their Martin lease, in section 27-12-8, near Wilmer, west of Monticello, in Drew County.

OKLAHOMA GROSS PRODUCTION TAX

Oklahoma City, Okla., Dec. 12.—For the first 11 months of 1923 the state of Oklahoma enjoyed an increase in income of nearly $1,500,000 from the gross production taxes alone as compared with the same period last year. The taxes collected to December 1 amount to $8,013,530.79.

The Warren City Tank and Boiler Company, the contractor, states that the use of these hoists, instead of the old method, a team of horses and an "A" frame, has largely reduced the construction time.

Erecting Steel Tanks—

large standpipes, chimneys, gasholders, etc., can be speeded up, and labor cost greatly reduced, by handling your frames, rings, and plates with a

Sullivan Turbinair Hoist
(Trade Mark)

These light (285 lb.) portable compressed air hoists may be set up anywhere. They will lift 2000 lb. at 110 ft. per minute on 50-75 lb. air pressure, using ¾" hose. The drum holds 500 ft. of 5/16 wire rope.

These pictures show a Turbinair Hoist handling 5x20 plates, weighing 2000 lb. each in building 18 55,000-barrel storage tanks for the Standard Oil Company of New York, at Tsippan, New York.

Ask for Bulletin, 4276-C

SULLIVAN MACHINERY COMPANY

122 So. Mich. Ave., Chicago — West. Indem. Bldg., Dallas

Easterners Encouraged by Decline in Texas And California; No Drilling Rush Indicated

Pittsburgh, Pa., Dec. 12.—There is a much better feeling in the petroleum fields of the East as reports showing a heavy decline in the output of crude from week to week, and the fact that the wonder gusher fields of California and Powell, Texas, have passed their peak and on a rapid downward trend.

With the better feeling in the East, the operator is not going to rush himself to an active new development, but is taking things quiet until the opportune time arrives, and then all are set to go. None of the operators are closing down development work entirely, but are working along quietly. This is a good time to drill as the cost of operations is much less than when the drill is being rushed and many are taking this advantage especially in the fields of small wells and at shallow depths, figuring that enough crude can be found to pay expenses and when the prices do advance, there will be some production from the new developments.

In the East the gas companies are doing the bulk of the work in certain parts especially in Pennsylvania, West Virginia, Southeastern and Central Ohio, as well as in the Eastern Kentucky fields. The only field that is really depended upon to furnish the bulk of the natural gas is West Virginia, although Central Ohio is doing its part and the time is short when the product will be looked for more closely in Eastern Kentucky, for in the Big Sandy valley it is a known fact that a great gas field exists. Just recently a wildcat well was started in the extreme southeastern part of the state, near Middlesboro, in Bell County, and near the Tennessee and Virginia lines. Should this well develop either gas or oil in commercial quantities, it will prove that the mountain regions are good places to drill.

The week was a rather quiet one in the fields east of the Mississippi river, owing to a steady rainfall for the first half of the week that brought about somewhat of a shut down of drilling wells, as streams passing through the oil country were out of their banks and mud knee deep. Thursday showed a change and colder weather prevailed and in some spots work was resumed.

The drill failed to bring forth any oil producers for the week, but 10 wells were completed with four dry and six gas wells, with a volume combined of 16,500,000 cubic feet. West Virginia is credited with one of its best wells for months, when the South Penn Oil Company drilled in No. 5 B. Webster in the DeKalb district of Gilmer County for 150 barrels. Outside of this good well the next largest was five barrels and from that down to two barrels. The 12 gas wells drilled in produced a volume of 32,500,000 cubic feet and eight dry holes were recorded.

Kentucky failed to show anything above 90 barrels for the week, and that was Sloan, Zook & Company's No. 1 on the L. R. Blyther lease in the Kettle Creek district of Cumberland County. The Paragon Development Company's pipe line from the Cumberland-Monroe field to Glasgow is now handling crude through it at the rate of around 1000 barrels daily. This will give the field a little relief and allow some of the shut in wells to be put to producing. Owsley County is attracting some attention of late. The development of that county is located several miles south of the old Sinking Creek field of Lee County, one of the substantial producing areas of Kentucky. The Coombs Brothers were the pioneers in the development and have two wells that started at better than 50 barrels each, while the Petroleum Exploration Company has brought in several excellent gas wells and are now utilizing the gas in a carbon plant constructed by it a distance of seven miles from the gas field, which is connected by a 10 inch pipe line. There are six companies starting work in Owsley County. Western Kentucky developments are lagging, the only work of consequence being shown in Warren, Allen and Barren Counties, and in Monroe and Cumberland Counties. There are numerous idle drilling outfits in all the fields that will soon be at work again as the better feeling comes.

The Southeastern Ohio field has its usual number of small stripping pumpers. Central Ohio shows one exceptionally good producer drilled by the Ohio Oil Company on the Billy Orr lease, southeast of Wooster in Wayne County, the well doing 100 barrels from the deep Clinton sand. The Wehrle Stove Company found a 20 barrel producer in the Big Lime formation, above the Clinton, in an advance well on the W. G. Meacham lease in Franklin township, Licking County.

In the Northwestern Ohio field just at the north edge of the town of Cygnet, in Wood County, the Ohio Oil Company, at better than 350 feet in the Trenton limestone, brought forth a 110 barrel natural producer on the Moyer lease. This well is an offset to the No. 1 of the Western Ohio Oil Company on the Loose lease, drilled several months ago, and which produced 163 barrels at 340 feet in the same formation. No. 2 on the last named lease did 90 barrels in five hours at a depth of 344 feet in the Trenton, and among the deepest wells in that immediate vicinity, indicating that there are several pay sands in the Trenton, as recently a pay was found at below 500 feet in that formation. The finding of deep oil is going to mean the redrilling of a large amount of the old Trenton field, where more than 150,000 wells have been drilled since the initial discovery well was drilled in 1884 in the corporate limits of Lima.

Quietude prevails in both the Indiana and Illinois fields.

Texas Company Officials Hold Conference at Tulsa

Tulsa, Okla., Dec. 12.—A party of Texas Company officials headed by Amos L. Beatty of New York is now in Tulsa making an inspection of the company's holdings in Oklahoma. The company conference which starts today is expected to last throughout the week. Practically every department of the Texas Company is represented in the group of company officials. Besides Mr. Beatty the following men are present: T. J. Donoghue of Houston, first vice president; R. C. Holmes, vice president; C. P. Dodge of Houston, sales manager; Dan Morgan of Houston, head of the production department; Fred T. Manley of Houston, manager of refining; B. A. Hull of Tampico, Mexico, vice president of the Texas Company of Mexico; J. C. McCue of Fort Worth, assistant manager of production; W. Jarvis of New York, manager of railroad traffic; J. H. Lapham of San Antonio, director and M. W. Bahan of Fort Worth, manager of natural gas.

Crude Oil Emulsions Successfully Treated

by the

Electrical Dehydration Process

Analysis, Tests, and Estimates Furnished

PETROLEUM RECTIFYING COMPANY OF CALIFORNIA

See Pages 22 and 23 this Week's Oil Weekly

We carry in our Houston warehouse a large and complete stock of Harrisburg seamless forged products, line, casing and drill-pipe couplings and bull plugs; also largest stock of boiler tubes, seamless, lapweld, and charcoal iron, in the Southwest. Also complete stock in Tulsa.

For prompt delivery to any point in Texas, Oklahoma, Louisiana and Mexico, address

Harrisburg Pipe & Pipe Bending Company of Texas

Houston, Texas. Telephone Preston 5540—P. O. Box 1133

Prospects Brightest Yet in Canadian Oil Development—New Producer for Okotoks

Calgary, Alta., Dec. 10.—An important development from the Okotoks field 35 miles southwest of Calgary is the securing of some oil and additional gas production in the Royalite Oil Company's No. 4, section 7-20-2w5. At 2890 feet this test had an estimated wet gas production of 7,000,000 cubic feet a day. This production was cased off, and the hole carried deeper for oil. For some weeks it has been shut in with a string of tools at the bottom of the hole at 3150 feet, the intention being to resume work in the spring.

Apparently the well drilled itself in, but when opened a few days ago it showed a large gas production from the lower horizon and considerable light oil. The oil is about 61 Baume, similar to the light oil production of the famous Dingman well drilled on section 6-20-2w5, some 10 years ago, and now listed as Royalite No. 1. No estimate has been made of the oil production, but the gas is stated to indicate about 8,000,000 cubic feet a day from the lower sand. The well, when opened, flows by heads. Royalite Oil Company now has four gassers, two, the original Dingman well and No. 4, having also some oil production. The wet gas is handled in a gasoline plant, and the residual production piped to Calgary.

The first definite test of the British Petroleum's No. 2, section 30-46-6w4, in the Irma-Wainwright field east of Edmonton, gave a production of 20 barrels in one hour from a two inch pipe, the well flowing by heads at short intervals. The oil stands 1800 feet in the hole, which is 2035 feet deep. No further drilling has yet been started, either by the British Petroleums, Ltd., or by other leaseholders in this territory. Practically all the close in territory is already tied up.

In western Canada there are a few new projects under way, the most important of which probably is the projected merger of the various companies in the Sweetgrass field. The Corlett syndicate of Calgary, backed by British and Australian capital, has optioned Lethbridge Oils, Ltd, (Baalim), Coutts-Sweetgrass Oils, Ltd. (McLean), and several other companies, as the preliminary to the organization of a $750,000 company to merge the various interests. The options are on the basis of completion of the Baalim well, section 12-1-15w4, now shut down at 2030 feet, and the expenditure of $100,000 in additional development.

To Geologize

Meanwhile the Canadian Oil and Refining Company is sending its geologist into the area mapped last summer, north of Many Island Lake, to make a location on which a test will be rigged up this winter, with drilling to start early in the spring. Another new test near New Dayton, in Southern Alberta, will likely be drilled by Minneapolis interests, which have leased territory around New Dayton and Warner. This district is famous for surface gas production, many farmers using gas from their own shallow wells, and the Minneapolis men regard it as a good prospect for deeper drilling.

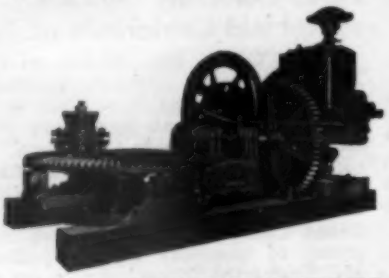
In general, drilling operations in the Canadian West seem to be coming to a standstill, though the results of the past two months have been the most definitely encouraging in the history of the country.

In Ontario the Union Natural Gas Company has spudded in No. 249 for a deep test on the Mancell farm, Tilbury East, Kent County, and is down over 100 feet. No. 248, Truckenbrod farm, Romney township, Kent County, will start rimming down to the Trenton limestone next week. The Glenwood Natural Gas Company is pulling the five and three-sixteenths casing from their deep producer on the Hugh Shanks farm in Romney township to recover a bailer lost in the hole.

GENERAL PETE BUYS

Los Angeles, Calif., Dec. 8.—Information comes from Bakersfield that the General Petroleum Corporation has purchased the entire holdings of the Welch-Pollak interests in the Maricopa-Sunset fields and that a drilling campaign is in prospect. It is reported that the consideration was close to $1,000,000.

More Power—Less Vibration



Instant Service

Insist on Lightning Pumping Powers

They Are Correct in Design

HUSKY ENOUGH TO DO THE JOB RIGHT

The reliable eccentric motion does away with jerky lines. Built in 3 sizes.

No. 1— 6 to 8 H. P. engine, weight 3200 lb.
No. 2—12 H. P. engine, weight 4600 lb.
No. 4—Belt drive, weight 6500 lb.

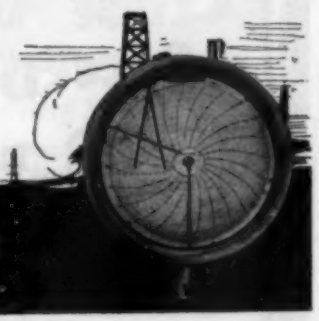
Turntable gear is easily removable and having a broad face, coarse teeth and large diameter will stand up to the heaviest loads.

SHACKLE LINES SET LOW TO THE GROUND (13 IN.) ELIMINATE EXCESSIVE STRAIN. QUICKLY INSTALLED.

Manufacturers of Jacks, Stuffing Boxes, Casing Heads and Safety Casing Head Tops.

Oil Field Supply Dept.
KANSAS CITY HAY PRESS COMPANY
Kansas City, Mo.

FOXBORO ORIFICE METER
A rugged, accurate Orifice Meter, for measuring Casinghead Gas, Natural Gas, Oil, Steam, Gasoline, Water.
Write to Dept. N. for Bulletin 113-1
THE FOXBORO CO., Inc.
Foxboro, Mass., U. S. A.
5070 213 S. Cincinnati Ave., Tulsa, Okla.



FOXBORO
TRADE MARK
THE COMPASS OF INDUSTRY

"IT'S A WILSON"
THE PINNACLE OF PERFECTION
— IN —
OIL WELL TOOLS
WILSON & WILLARD MFG. CO.
2301 EAST VERNON AVENUE
LOS ANGELES, CALIF.
SPEED! SAFETY!
STRENGTH! EFFICIENCY!

Completions for Past Week in U. S. Fields

Kansas

Company, Well, Location—	Initial Production bbls.	Depth
Cowley County—		
J. D. Hill & Waite Phillip Johnson 1, NWc SE 20-33-3	175	3198
Elk County—		
Roth et al Hanna 1, NEc SW 13-29-8	150	2103
Mitchell et al Perkins 1, C W L. SW SE 33-39-9	¶	1518
Greenwood County—		
Magnolia Pet. Co. Wellty 1, NEc NW SE 29-26-9	¶	1100

Oklahoma

Company, Well, Location—	Initial Production bbls.	Depth
Garfield County—		
Sinclair Oil & Gas Co. Hartley 16, C SW NW NW 18-22-3W	40	1753
Kisner 17W, C SE SE NW 19-22-3W	5	2485
Rabbits Foot Oil Co. King 1, SEc NE NE 9-21-3W	*	3020
Okfuskee County—		
Link Oil Co. Saryokishe 1, SEc SW 4-13-8	850	3482
W. Phillips Barnett 6, SWc NW NE 13-11-11	¶	2758
Kingwood Oil Co. Barnett 4, NEc NW SE 24-11-11	¶	2767
Okmulgee County—		
Independent, Barton & McLain Fisher 2, SEc NE NE 1-12-11	275	2575
Seminole County—		
Dixie Oil Co. Long 3-A, SWc SE NE 32-8-7	60	1861
Beckham County—		
Magnolia Pet. Co. School 1, C SE SE NW 16-9-23w	*	3917
Carter County—		
Magnolia Pet. Co. Johnson 1, C S L SW NW 17-5-1	*	3333
B. A. Simpson Vorhees 2, C SW SE NE 9-4-2w,	520	2064
Schimerhorn-Young Sparks 3, C NW SW SW 30-2-3w	¶	2049
Healdton Pet. Co. Frazier 1, C SW NW SW 35-2-3w	*	2430
Schimerhorn's Holman 1, C SW NW NE 25-2-3w	¶	2639
Creek County—		
Independent T Beaver 6, NWc NE NE 35-14-8	50	2518
Mason et al Wilson 3, NEc SE NW 23-16-8	530	3120
Tom Kelly Meyers 1, SWc NW 3-14-10	15	3234
Carmon et al Tiger 1, NEc SE 5-15-9	525	2929
Chapman Oil Co. Beaver 2, C SW SW SW 9-15-8	*	3370
Red Bank Oil Co. Meyers 6, SEc SW SW 9-16-8	*	2955
Pure Oil Co. Wright 1, SEc NW 19-17-9	¶	2165
Duquesne Oil Co. Corlkes 2, NEc NW NW 23-17-8	40	2315
Sidwell Drilling Co. Crisbie 1, SWc SE 23-18-8	*	3458
Grady County—		
Concord Oil Co. School 1, SWc 16-5-8w	*	2503
Grant County—		
Walters O. & G. Co. Shephard 1, SWc SW NE 25-27-7w	*	3580
Jefferson County—		
J. A. Dingwall et al Tims 1, SEc NW NW NW 25-5-6w	*	3315
Kay County—		
McCaskey & Wentz McKee 42, C SE NW SW 34-25-1w	58	2588
Comar Oil Co. Beverlin 17, NWc 34-25-1w	10	2014
Beverlin 21-A, SWc SE NW NW 34-25-1w	61	2012
Love County—		
J. C. Cook Oil Co. Westheimer 1, C SE SE NW	*	3006
Muskogee County—		
A. B. Ice F. Grayson 2, C E L NW SW 2-15-16	*	1475
McIntosh County—		
M. P. Evans J. Hawkins 1, SWc NE SW 20-12-14	*	2970
Noble County—		
The Texas Co. H. W. Roy 1, NWc SE 12-24-3	*	4139
Gypsy Oil Co. Evans 22, SEc NE SE NE 10-24-1w	100	2144
Shawver 77, C S L N½ S½ NW 2-24-1w	250	2214
Comar Oil Co. Gaume 11, SWc NW SW NE 2-24-1w	*	2381
Okmulgee County—		
J. E. Wallace H. Charles 1-A SWc NE NE 31-15-14	*	1763
Kawfield Oil Co. Thompson 1, NEc NW 24-16-11	*	2353
Claypool et al Allen 1, SWc SE SW 3-14-12	*	2768
Roxalene Pet. Co. Kensley 4, SWc NW SE 24-13-12	15	1945
Osage County—		
Ind. Terr. Ill No. 318, NE 34-29-11	¶	915
Homaokla Oil Co. No. 7, NE SE SE 30-24-11	*	1866
Mutual Oil Co. No. 22, SE SW NW 32-24-8	*	725
Lester 2, NEc SW NE 10-19-10	70	1720
Lester 1, NE SE NW 10-19-10	30	1709
Townsite 1, NEc SE 25-20-9	¶	1777
Sand Springs Home No. 3, NE NW 31-20-11	*	2080
No. 4, NW SE 31-20-11	42	1792
Pawnee County—		
Cosden O. & G. Co. School 1, No. 104, SWc 16-19-6	*	3420
Watchorn's Miller 10, NEc SW 33-23-3	40	2678
Stephens County—		
McWood Oil Co. Demon 2, NWc SW 25-2-6w	*	1570
Magnolia Pet. Co. Dolly Bartley 2, C NW NW NW 20-1-8w	¶	1938
Morgan 7, "B" SWc NE SE 32-1-8w	*	2280
Tillman County—		
Okla-Tex Oil Co. Owen 2, NEc SE SE NE 7-5-14w	75	1534
Riverbed 3, SWc NE 4-5-14w	25	1614
Tulsa County—		
Noble Oil & Gas Co. Stelle 1, SWc NW SE 20-17-14	*	1952

Texas

CORSICANA-POWELL

Company, Well,Location—	Initial Production Bbls.	Depth
R. E. Brooks et al I. N. Cerf 6	1400	3003
I. N. Cerf 7	1450	2973
H. B. Dorning et al W. C. Clements 1	*	2992
Gulf Prod. Co. M. A. Crews 14	150	2977
M. A. Crews 15	150	2975
Humble O. & R. Co. I. N. Cerf 2-B	240	2967
M. A. Crews 11	100	2992
R. D. Flemming 3-B	150	2970
R. D. Flemming 8-A	700	2962
W. C. Humphreys 22	250	2963
S. D. Ramsey 10-B	185	2952
J. K. Hughes Dev. Co. P. H. Alexander 4	3500	2963
Humphreys Oil Co. W. J. McKie 58	165	2896
Garland H. Kent R. D. Flemming 6	350	2958
R. D. Flemming 16	300	2960
R. D. Flemming 19	400	2945
Kirby Pet Co. R. D. Flemming 2	700	2977
Simms Oil Co. H. B. Boyd 2	650	2979
R. H. Boyd 1	1745	2970
J. T. Rose 2	1850	2974
J. T. Rose 3	650	2978
J. T. Rose 4	950	2978
Skelly Oil Co. L. Keith 2	300	2970
L. Keith 6	5000	2983
Sun Oil Co. O. C. Barron 1	40	2992
The Texas Co. R. D. Flemming 11	200	2983
Western Oil Field Corp.'s (Mutual) Boyd-Howell 3	500	2961
Boyd-Howell 7	*	2940

BURKBURNETT

Company, Well,Location—	Initial Production Bbls.	Depth
Gulf Prod. Co. E. A. Dale 14	190	1873
Morgan & Verschoyle G. W. Chapman 1	6	1915

ELECTRA

Company, Well,Location—	Initial Production Bbls.	Depth
Brown & McCallister S. B. Burnett et al 2	*	855
Buffalo Texas Oil Co. L. P. Douglass 2-A	*	1100
Texhoma Oil & Ref. Co. W. T. Waggoner 11-F	75	1953
Hartford Trust Co. S. B. Burnett 6	†	700

ARCHER COUNTY

Company, Well,Location—	Initial Production Bbls.	Depth
Cranfill et al L. F. Wilson 1	*	1800
Empire Gas & Fuel Co. L. F. Wilson 1-B	20	1404
Featherstone et al L. F. Wilson 3-C	75	1605
P. F. Gwynn et al Mrs. J. H. Carter 5	80	1374
J. V. Henley et al L. F. Wilson (Blk. 24) 3	50	1600
Kentucky Oil Corp.'s L. F. Wilson 2	65	1395
Oil Investment Co. J. E. Parrish 3-B	35	1598
R. M. F. Oil Co. L. F. Wilson 3-B	100	1603
Sixty Six Oil Co. L. F. Wilson 4-B	400	1594
L. F. Wilson 5-B	125	1596
Sunshine State Oil & Ref. Co. Carter Bros 11	60	1580
The Texas Co. Carter Bros. 8	125	1584
Carter Bros. 9	70	1375
Sunshine State Oil & Ref. Co. Carter Bros. 12	130	1586
Carter Bros. 13	115	1584
C. H. Verschoyle et al L. F. Wilson 1	20	1405

STEPHENS COUNTY

Company, Well,Location—	Initial Production Bbls.	Depth
Prairie O. & G. Co. J. F. Brown 1-B	*	3330
Equity Pet. Corp I. B. Childs 10	150	3235
Walker & Caldwell Prod. Co. Walker & Caldwel 14	55	3315

DESDEMONA-GORMAN

Company, Well,Location—	Initial Production Bbls.	Depth
Magnolia Pet. Co. W. G. Westmoreland 14	25	2867

RANGER-EASTLAND

Company, Well,Location—	Initial Production Bbls.	Depth
Harrell et al Mahan 1	*	3000
Panhandle Ref. Co. Webb 5	70	1170
Mayhew et al Huntington 1	*	600
Pennant Oil & Gas Co. Webb-Albin 4	360	2505

GULF COAST

Company, Well,Location—	Initial Production Bbls.	Depth
Goose Creek—		
Gulf Prod. Co.'s Chapman-Bryan 6	150	4325
Richmond—		
Gulf Prod. Co.'s Davis 7	*	725

Get

Your Copy

of This New

"UNITED" FITTING CATALOG

Every oil producing and refining company should have a copy of this NEW BIG VALUABLE Loose-Leaf Catalog. Besides showing a complete line of Fittings and Oil Producing and Refining Equipment manufactured by this company, it also contains much valuable information for the oil industry and its related branches.

Write today for your copy of this valuable catalog.
It will be promptly sent, without obligation.

UNITED IRON WORKS, Inc.

TULSA KANSAS CITY, MO. DALLAS

"UNITED" IRON WORKS INC. FOR SERVICE

EVERYTHING

FOR THE OIL WELL

Operators in the oil fields in this territory have found that the many facilities we maintain assure them at all times

A DEPENDABLE SOURCE OF SUPPLY

Peden supplies have had a large part in the development of the oil fields of Texas. With our years of experience in meeting the requirements of these fields we are in a position to serve best. Send us your orders or write today for prices and information.

"We Ship Quick"

The Largest Supply House in the Southwest

PEDEN IRON & STEEL CO.

HOUSTON SAN ANTONIO
FT. WORTH SHREVEPORT

California

TORRANCE

Company, Well, Location—	Initial Production Bbls.	Depth
Pet. Midway Post Houts 1	1000	3771
C. C. M. Oil Co. Torrance 14	700	3725
Torrance 15	1000	3715
Torrance 18	900	3750
Shell Co. Grenger 1	200	3575
Fed. Drilling Co. Huyck 1	1000	3747
Star Pet. Co.'s Parsons 1	1000	3731
U. S. Royalties 5	2000	3765

LONG BEACH

Pet. Midway Harlow Kent 1	4600	5000
Walker 1A	2000	4598
United Oil Co. Denni 2	3000	5039
Henderson Pet. Co. Garrett 2	1000	4849
Union Oil Co. Hart 3	1150	4116
General Pet. Co. K. & H. 4	800	5117

SANTA FE SPRINGS

Union Oil Co. Bell 14	800	4700
Wilshire Oil Co. Baker 1	85	4580
Ambassador Oil Co. Baker 5	700	4680
Oscar Howard Bell 3 (wo)	600	4595
C. C. Julian 5 (wo)	280	4663
Buckeye Union Irish 6	500	3585
Union Alexander 5 (wo)	150	4700
Shell G. H. N. 10	1000	4644

HUNTINGTON BEACH

Standard Thompson 1	400	3655
Hunt 22A	900	4530
Republic Prod. Co.'s Community 6	200	4621
A. B. C. Synd. 2	100	4525
Amalgamated Dennison 1	45	4774

Arkansas

Stephens Field, Ouachita County—		
Atlantic Oil Prod. Co. Webfer 3, 30-15-19	20	2095
Smackover Field, Ouachita County—		
Arkansas Nat. Gas Co. Patton 2, 31-15-16	250	2261
Patton 3, 31-15-16	40	2255
Burch & Walker Patton 4 31-15-16	200	2277
Forrest Oil Co. Hardin 4, 28-15-16	25	2265
Garrett et al's McElroy 1, 29-15-16	250	2283
Gulf Ref. Co. Patton 1, 32-15-16	20	2258
Keene & Wolfe's Myar 4 32-15-16	¶5-175	2245
Owenwood Oil Corp. Snyder 1, 34-15-15	250	1996
Snyder 2, 34-15-15	400	1971
Simms Oil Co. Laney 2, 31-15-15	¶20	2312
Standard Oil Co. Solmson 2, 29-15-16	300	2284
Sid Umstead 6, 32-15-15	15	2017
Sun Co. Patton 2, 31-15-16	100	2256
White et al's Watts 2, 30-15-16	200	2278
Smackover Field, Union County—		
Federal Pet. Co. Murphy 1, 22-16-15	300	2059
Gulf Ref. Co. Goodwin 4, 16-16-15	10	2082
Humble Oil & Ref. Co. Saxon 1, 32-15-16	85	2261
Magnolia Pet. Co. Meekin 2, 33-15-16	*	2286
Weatherbee et al's Rice 4, 6-16-16	30	2263
Total, 19 wells	2650	

*Also flowing 5000 barrels salt water.

Eastern States

PENNSYLVANIA

Allegheny County—		
Moree Oil & Gas Co. C. McMath 1	¶3	....
Murphy & Co. Murphy 1	¶3½	....
Harbison & Co. Downer 1	¶2	....
Davis Oil & Gas Co. Davis 1	*	....
Greene County—		
Carnegie Nat. Gas Co. Willard 1	¶3	....
Philadelphia Oil Co. James Powell 1	¶2½	....
Waynesburg Gas Co. J. T. Clutter 1	*	3275
Washington County—		
E. H. Tigue H. McHoney 2	*	2873
Magnetic Oil & Gas Co. Scott Hrs. 1	*	....
Beaver County—		
J. R. Edwards & Co. McDevitt 5	¶2½	3250

WEST VIRGINIA

Ritchie County—		
Carter Oil Co. J. E. Leggett 1	¶2	....

A WORLD SUCCESS!

Within approximately 9 months since its introduction, the GUIBERSON Swab has sprung into world-wide preference. In many territories, notably the Smackover and the Powell fields, fully 90% of all swabbing in recent months has been done with the GUIBERSON Swab. In California users pronounce it the most successful swab of any used there. Write for fully descriptive literature.

The Guiberson Corporation
Box 1106, Dallas, Texas
Los Angeles
Tulsa Houston Newark, O.

GUIBERSON

BETTER BE SAFE THAN SORRY

Company, Well, Location—	Initial Production Bbls.	Depth
Premier Glass Co. M. Haymond 2	*	....
Hope Nat. Gas Co. I. M. Paden 1	¶2	....
Joseph Goff Andrew Goff 1	¶2	....
Star Oil Co. Oliver Spencer 4	¶2	....
Penn Royal Oil & Gas Co. I. N. Jackson 2	¶2	....
J. F. Deem & Co. C. J. Williamson 4	3	....
Pittsburg & West Virginia Gas Co. Ben Prather 1	2	....
Gilmer County—		
South Penn Oil Co. B. Webster 5	150	....
Harriett Gainer 1	*	....
Pittsburgh & West Virginia Gas Co. Davis Linger 2	*	....
Kanawha County—		
Cosmos Carbon Co. Osborne Bros. 13	5	....
United Fuel Gas Co. W. C. Thompson 1	¶5	....
A. Martin 1	¶5	....
Lincoln County—		
United Fuel Gas Co. M. B. Tully 1	¶3	....
White Sand Pet. Co. R. Pauley 6	¶2	....
Bear Branch Gas Co. Spencer Hill 2	¶2	....
Roane County—		
S. A. Simmons & Co. W. P. Poole 2	5	....
Robert Cummin P. Mithorn 1	*	....
Calhoun County—		
Cold Fork O. & G. Co. G. W. Dye 1	3	....
Grantsville Oil & Gas Co. J. B. Dye 1	*	....
Marshall County—		
Manufacturers Light & Heat Co. A. & E. Schenk 5	¶3½	....
City & Suburban Gas Co. John Harsg 3	*	....

BAKER
CASING SHOE CO.
Box 284 "C" Huntington Park Sta.
LOS ANGELES, CALIF., and
Box 239 -C COALINGA, CALIF.
MANUFACTURERS AND DEALERS
Oil Well Specialties
for Advanced Methods
Practical and Dependable
BAKER
Anchor Wall Packers
Baker Casing Shoes
Bridge Builders
Cement Retainers
Cement Plugs
Clean-Out Bailers
Dump Bailers
Die Nipples | Water
Die Collars | Tight
Gas Traps
Hinged Spiders
Heaving Plugs
Pitman Ends
Plain Casing Shoes
Regular Hook Wall Packers
Release Hook Wall Packers
Rotary Bits Baker Type
Rotary Hole Guides
Rotary Shoes
Rotary Tool Joints
Rotary Wall Hooks
Split Shoe Guides
All Supply Houses
or Direct

Company, Well, Location—	Initial Production Bbls.	Depth
Harrison County—		
Grasselli Chemical Co. R. G. Davis 5	*	....
Bridgeport Lamp & Chimney Co. Ralph Jones 1	*	2970
Monongalia County—		
Manufacturers L. & H. Co. W. L. Jackson 1	5	....
Tyler County—		
Spence, Schrader & Co. W. & P. Doak 1	¶2	....
KENTUCKY		
Barren County—		
Cave City Oil & Gas Co. Lyons 1	*	....
Bybee 3	2	....
Fred Moore Scott 1	20	596
Federal Oil Co. Preston 3	2	440
Wright 4	1	437
Smith & Son K. Nichols 1	*	....
Houchins Leasehold J. Mansfield 4	30	565
South St. Pauk Oil & Gas Co. L. Summers 6	6	600
Owensboro District—		
Newton Oil & Daugherty Volgers 2	10	....
Newton Oil Co. D. Spurrier 1	*	....
Chicago Pet. Synd. Taylor 1	*	1300
B. Thompson Payne 58-a 1	*	....
Archer & Co. Curry 2	*	....
Owsley County—		
Petroleum Exploration Co. D. C. Manious 1	¶3	....
W. S. Hamilton 1	¶1	....
A. J. Barker 1	*	....
Atlantic O. Prod. Co. Smallwood 1	5	....
Johnson & Co. Adam Farley 1	*	....
Allen County—		
Watterson & Co. B. Willoughby 3	3	....
Fishburn Oil Co. G. C. Carter 1	*	340
C. R. Borah R. Good 8	3	340
M. B. W. Oil Co. F. Gibson No. 2 tract 3	2	243
Lawrence-Johnson Counties—		
Indian-Tex Pet. Co. Geo. Gillam tract 2, 6	10	825
Geo. Gillam tract 2, 7	15	828
Pluto Oil Co. Robert Fyffe 3	10	842
Cumberland County—		
Bonnell, Sloan & Zook L. R. Blythe 1	90	....
South Kentucky Oil Co. L. S. Blythe 1	*	406
Warren County—		
Plantation Consolidated Oil Co. W. A. Gott 9	15	1014
C. G. Foster & Co. Dr. Francis 3	20	548
Hopkins County—		
William Redman Bishop 1	*	500
Shakerag Oil & Gas Co. At Hanson 1	*	1214
Simpson County—		
C. E. Phelps & Co. Holland 3	18	496
Morgan County—		
Petroleum Exploration Co. J. H. Osborne 1	¶½	....
Owen County—		
J. A. Boyle L. P. Alexander 1	*	801
TENNESSEE		
Clay County—		
Neeley's Creek Oil Co. Daly 1	*	565
Marshall County—		
Beckley Oil & Gas Co. Haywood 1	*	....
SOUTHEASTERN OHIO		
Noble County—		
E. E. Vorhies & Co. S. M. Williams 1	1	....
S. Williams 2	4	....
White, McKelly & Co. C. N. Brown 3	2	....
Felix Gerst & Co. A. C. Weisant 4	3	....
Charles Robinson M. Broedel 4	2	....

Company, Well, Location	Initial Production Bbls.	Depth
Casper Schott & Co. Ambrose Null 1	*	....
Washington County—		
C. E. Hammond Estate Sophia A. Roe 7	3	....
Pleasant County Bank A. B. Little 16	3	....
Monroe County—		
H. Biengar & Co. Elem Briggs 1	¶3½	....
Harrison County—		
Grant Sinsill & Co. J. Duswald 2	¶¼	....
CENTRAL OHIO		
Wayne County—		
Ohio Oil Co. W. M. Orr	100	....
Logan Gas Co. C. L. Alleshouse 1	¶½	....
W. F. Funk 2	¶½	....
East Ohio Gas Co. R. Grabill 1	*	....
Ohio Fuel Gas Co. S. C. Jackson 1	¶1	....
John Ferguson 1	*	....
John Gaut & Co. K. M. Marsh 1	¶¼	....
Brinkerhoff & Co. A. Smith 2	¶2	....
Klise-Eckstein-McCann Oil Co. D. Snyder 1	¶½	....
Licking County—		
Wehrle Stove Co. C. R. Fetty 2	5	....
W. G. Meacham 1	20	....
H. M. Walcott 1	*	....
Spindler & Donaldson C. A. Bounds 5	3	....
Ohio Fuel Supply Co. Dan Shaw 1	¶1½	....
Medina County—		
Logan Gas Co. Myra Brogan 2	¶2	....
H. C. Spieth 3	¶¼	....
Ohio Fuel Gas Co George Acker 3	¶5	....
George Acker 4	¶3½	....
Richland County—		
Cupples & Ozier Barnes 1	¶1¼	365
George Van Tilburg Porter 1	¶1	363
Mitchell & Noah Bud Hammon 1	*	....
J. Wiltz A. F. Kinsel 1	*	....
Knox County—		
Snyder & Rohrer H. L. Green 5	3	....
I. J. Denbow & Co. G. Miller 25	3	....
Athens County—		
Ohio Fuel Supply Co. H. W. Barnhart 2	¶1	....
Reel Run Oil & Gas Co. F. Manikin 1	¶¼	....
Hocking County—		
Arkansas Nat. Gas Co. H. Green 1	¶½	....
Kelch Bros. Howard Chutes 1	*	....
Lorain County—		
East Ohio Gas Co. C. F. Shaffer 3	¶1¼	....
Wiser Oil Co. F. J. Krebs 1	*	....
Holmes County—		
East Ohio Gas Co. E. & M. Scott 2	¶½	....
Huron County—		
George S. Lacknett Gilger 1	¶1	....
Fairfield County—		
Logan Gas Co. S. W. Kenney 4	*	....
NORTHWESTERN OHIO		
Wood County—		
Ohio Oil Co. J. A. Moyer 19	110	1502
R. C. Shuler & Co. W. C. Blystone 5	10	1504
Allen County—		
Indian Oil Co. Mathias Etzen 4	35	1342
Hancock County—		
Fuller & Co. Jacob Fellers 8	12	1361
INDIANA		
Sullivan County—		
Charles Hollingsworth & Co. J. H. Harrison 1	*	653
Dugger Oil Co. T. Carrothers 2	*	869
Fred Bays C. Huff 1	*	750
ILLINOIS		
Monroe County—		
Henry Schneider & Co. Dena Acker 40-a 2	*	240

Two 112-foot Moore Combination Drilling Derricks used by the largest operators in Venezuela.

With the Pioneers

A pioneer derrick for pioneers! That truly epitomizes the position of the Moore derrick in the oil and gas industry. It was the first really successful steel derrick. By its simple, practical and rugged construction, it practically created the steel derrick industry. Since then it has ever accompanied pioneers into new and unexplored fields. And once in, an ever growing family of other Moore derricks soon grows up around it. For it never fails to give satisfaction.

Strength of Tube

The tube, when used as a column, is by far the strongest structural section known. Therefore, the Moore derricks give the greatest strength with the lightest weight. A girt, brace, or leg section, if lost or damaged, may be easily replaced with ordinary pipe. It is the simplest and easiest of all derricks to erect, dismantle and transport. It is proof against rot, insects, fire and wind hazard. And back of it is the oldest and largest organization in the World devoted exclusively to the designing and building of steel derricks and steel rigs.

LEE C. MOORE & CO., Inc., Pittsburgh, Pa.

Established 1907

BRANCH OFFICES AND WAREHOUSES

Midwest Bldg. Casper, Wyo.
Atlas Life Bldg. Tulsa, Okla.
Magnolia Bldg. Dallas, Texas
Union Trust Bldg. Parkersburg, W. Va.
P. O. Box 339 Shreveport, La.

California Representative
Buck & Stoddard

California St. San Francisco
A. G. Bartlett Bldg. Los Angeles

MOORE TUBULAR STEEL DERRICKS

UNDERREAMER

Is found in all the oil fields of the world and at your supply store.

THE BRIDGEPORT MACHINE COMPANY

Factory and general offices, Wichita, Kansas

Say you saw it in The Oil Weekly

Promote Safety and Reduce Time Losses

Study of underlying causes will prevent recurrence of many field accidents

THE WIDE attention being given accident prevention work, which is becoming general throughout the oil industry, should make the following series of articles on the fundamental causes of accidents of real interest. A clear knowledge of the reason why an accident happens is essential if we are to undertake intelligently the prevention of a recurrence of like accidents.

No attempt will be made in the following series to consider secondary or contributory causes, which of course are important and should be given due consideration in a well organized campaign. However, we feel that the consideration due these causes will come about automatically when the important work of controlling the fundamental causes is understood. There are, all told, sixteen causes which are fundamental and which cover completely any accident which may occur in the fields, refineries, or pipe lines. The OIL WEEKLY will be glad to answer any question whatever regarding this classification of causes, trusting that a careful study of the classification will lead to its adoption as a standard by the petroleum industry.

First Cause

The first cause included in the classification is: Class of work beyond the physical or mental ability of the ininjured. Here is a typical example: Recently in one of the Texas fields where electricity is used, a generator got out of order. It happened that no one was present who knew how to adjust the generator. Several people experimented on it; none of them knew what to do. Fortunately no accident resulted, but any electrician will admit that a serious accident and perhaps a fatality might easily result from tampering with electricity without knowing anything about it.

It is probably a good thing that while most of us appreciate our own ability, we are not content to confine our activities within the limitations which we know exist. And yet pride is often the incentive that prompts us to undertake something for which we know we are not fitted. For instance, the derrick man may be off the job for some reason, and the driller says, "Bill, get up there and let's get back in the hole." Bill goes because his pride refuses to allow him to admit that he is nervous when working above the ground. Perhaps his will power may enable him to carry on; he may become nauseated and fall.

Over Confidence

There is also the over confident type of workman. His willingness and eagerness to be useful sometimes exceed his better judgment. He is ready to attempt anything from extracting a foreign body from the eye of one of his comrades to the repair of a 2300 volt motor. This willingness, altogether commendable, often results in disastrous consequences, and this type of workman should study his own capabilities. He will then see the danger of trying to do something about which he knows little or nothing.

The Petroleum Safety Council of Texas has classified all accidents as coming under 16 causes. This is the first of a series of articles to be run by The OIL WEEKLY discussing each of these. Each article will deal with one cause and illustrations will be used to aid in making the articles comprehensible. The series of articles is sponsored by the Petroleum Safety Council of Texas. —The Editor.

The logical point of attack upon accidents of this class is through the foreman. He can readily point out that it is the duty of every man to know his own ability and the ability of the men who may happen to be under his supervision.

The seriousness of over estimating or not knowing a man's ability can be realized from these facts. Last year, out of the 34 boiler explosions reported from oil fields in the United States, 27 are known to have been caused from low water. It is logical to conclude that had the men who were firing these boilers known their business the water would not have become too low. Few men will place their own lives in a hazardous position if they know it.

Insisting that a man know the work which he is employed to do is in no sense a check on ambition. It is rather an incentive for him to prepare himself for advancement by familiarizing himself with the work which he will have to undertake when advancement comes, so that he will be able to handle it safely and intelligently. A man so trained and prepared will seldom subject himself to danger from not knowing what he can do.

Morris Resigns as Head Of Bureau Oil Division

Washington, D. C., Dec. 11.—Henry C. Morris, for two years chief of the petroleum division of the Bureau of Foreign and Domestic Commerce, has resigned to return to private business. Mr. Morris was appointed by Secretary Hoover in August, 1921, to organize the Petroleum Division, and has performed many services of great value to the industry.

Mr. Morris is a graduate mining engineer of the Massachusetts Institute of Technology, and has been actively connected with various phases of the mining and petroleum industries since 1901, having served as engineer, mine manager and operator in Colorado, California, Nevada and Mexico, and as oil field operator in California. During the war he was connected with the fuel administration, and later served with the Bureau of Mines as special assistant to the director of petroleum matters and with the United States Chamber of Commerce as special advisor on petroleum and minerals.

ARGENTINA ABANDONED

Washington, D. C., Dec. 10.—The Royal Dutch Shell has announced the total suspension of all activities in Argentina, according to a cablegram just received by the Petroleum Division of the Department of Commerce from Trade Commissioner Brady at Buenos Aires.

This is not a picture of a magician lifting a ton. It is an oil field worker trying to lift something which he might have known that he could not. And he got what might have been expected—a strained back

Making Its Own Roads

In tropical wilderness, in mountainous districts, across deserts, and through uninhabited country where no other form of transportation is practical or economical, the "Caterpillar"* Tractor forges ahead, a real pioneer, making its own roads and then hauling over them, transporting heavy cargoes of boilers, machinery, drilling outfits, derrick timber, pipe and oil field supplies.

In the construction of pipe lines and in contract hauling, "Caterpillars" are used by producers and by contractors as the most dependable power because the "Caterpillar" is able to travel, climb, and pull in mud, sand, steep grades, plow through snow, and to operate successfully where no road exists.

Winch and cable attachments provide ready power for loading cargoes, placing machinery, and general construction work. Holt engineers, constantly studying the most extreme demands of cross-country transportation, have developed the "Caterpillar" to its present state of perfection. It is backed by Holt's positive guarantee of satisfactory performance, and by a most complete service organization.

** There is but one "Caterpillar"—Holt builds it*

THE HOLT MANUFACTURING CO., Inc.

PEORIA, ILL.
STOCKTON, CALIF.

Eastern Division: 50 Church St., New York
Cable Address: "Caterpillar," New York.

Branches and Service Stations All Over the World

CATERPILLAR

Underground

(The Hydra-Headed Monster)

EVERYTHING the business man reads has something to say about the goblin of Overhead that will get you if you don't watch out.

But to the Oil Man the goblin of Overhead is as nothing to the Hydra-headed monster of Underground!

He's a devil! He dulls your bits. He obstructs your way. He amuses himself with sundry and legion pranks—some known as fishing jobs.

For some much harassed Oil Men we now and then lop off a few branches of this Hydra-headed monster of Underground, and believe us when we say that two heads are not yet where any one grew before.

To make a long story short and so avoid beating the devil around the bush, we're darned good people to do business with.

Which isn't egotism at all when you consider that "He who knows and knows he knows"—you know!

We make the justly celebrated PELCO Rotary Fishtail Bits—which are pizen to Underground.

And one of the finest webs we weave to ensnare the monster and defeat him at his own game are on those occasions when a much harassed Oil Man calls us over long distance at $4.93 for the first three minutes to order a tool that will catch his fish.

And while lots of manufacturers claim to make just as good Tool Joints and Drill Collars and endless other oil country specialties as PELCO, no one ever has!

Some day, in a pinch, you'll look us up. In the meantime, goodby and a merry Christmas.

GOOD PEOPLE TO DO BUSINESS WITH

Pelican Well Tool & Supply Co.

General Offices: Shreveport, La.

M. Ind. Rgtrda. PELCO *Reg. U. S. Pat. Office*

Much East Texas Acreage Is Being Leased

Active wildcat campaign indicated for the spring in area northeast of Corsicana

By H. H. King

Corsicana, Texas, Dec. 10.—Encouraged by the large volume of flush production given up by the Woodbine sand in the structures formed by faulting in the Mexia and Corsicana-Powell districts in East Central Texas, the major companies and scores of independent concerns and individuals during the past five months have purchased leases on wildcat acreage on the zone of faulting that is known to extend from the north end of the Corsicana-Powell field into the upper part of Hopkins County, a distance of approximately 80 miles. These lease buyers are playing the faults for a series of oil producing structures in this wildcat territory on the strength of the broken chain of structures—Corsicana-Powell, Currie, Mexia, Kosse and Luling—already found productive in the Balcones fault zone to the south. The leasing campaign now drawing to a close begins just north of the town of Powell in Navarro County, and extends in a narrow strip varying from one to five miles in width across parts of Henderson, Kaufman, Van Zandt, Hunt, Rains and Hopkins Counties. Despite the fact that not a single test is drilling at present in this long stretch of territory, acreage prices have climbed steadily during the past two months, having started off early last summer from $1 to $5 per acre and now have a peak of $100 per acre, with an average for the 80-mile strip placed at $10 per acre.

This is the second leasing campaign to be staged in this particular section of the state on a large scale, as in 1921 and 1922, when the Mexia field was commanding the attention of the petroleum industry by reason of its volume of flush production, the Humphreys Oil Company and a number of other major companies and independent operators purchased leases on large tracts of land in Kaufman, Henderson and Van Zandt Counties and launched drilling campaigns with disappointing results. The Humphreys Oil Company was one of the pioneers and most aggressive in this unprofitable wildcat adventure, and was credited with having leased approximately 200,000 acres and drilled six deep holes at an expense totaling several million dollars. Completion of one dry hole after another by other concerns caused interest to subside in the wildcat area, and completely died out toward the close of 1922, with no new drilling of any importance since.

The uncovering of the Corsicana-Powell structure in January, 1923, and its later development into the most spectacular field in the history of the country, caused operators to reconsider the partially condemned counties to the northeast for oil possibilities, owing to the distance between the dry holes that had heretofore been considered a fair test of the area. The Corsicana-Powell field has been proven for production to date in an uninterrupted line to the southwest of the discovery well for a distance of seven and one-tenth miles, and with an average width of about 2500 feet, while the length of the Mexia field along the fault is slightly less than seven miles, with an average width of half a mile. The Corsicana-Powell field's maximum width is 3500 beet, but the Mexia structure spread out a distance of one mile at one point. The unusual narrowness of these two heavy producing areas prove that close drilling must be done in wildcat campaigns to uncover the main structures, if such exist along the faults further northeast in the state.

The proving of the Balcones fault zone further northeast for production by the development of the Corsicana-Powell field this year has recently served as a guide to operators in buying leases on the fault zone to the northeast, while the logs of numerous dry holes drilled in Kaufman, Henderson and other counties further northeast now furnish valuable information for geologists in determining the probable paths of the faults. Many geologists have been engaged during the past few months in correlating the logs of these dry holes, and working out the surface geology on the ground.

The opinion of these geologists as to the probable path of the fault zone to the northeast is remarkably uniform, judging from the narrowness of the strip the various operators have acquired protection leases on since the second leasing campaign begun this past summer. However, some of the geologists have induced their companies to play the west side of this so-called strip extending across parts of six counties, while others have been favorable to the opposite side. This difference in opinion as to the position of the fault line doesn't vary over two miles, as a rule, but the history of the Mexia and Corsicana-Powell fields indicates that one or the other could be completely off the structure, if one should be proven for production later on.

Although the Humphreys Oil Company and many of the major companies held unexpired leases in the six counties now commanding interest of wildcatters, these companies have taken an active part in the second leasing campaign, but on this last occasion have confined their purchases to a narrow strip across the counties, except for the Gulf Production Company, whose geologists are reported to have worked out a small fault zone extending from Elmo in Kaufman County to Quinlan in Hunt County, and Gulf has acquired considerable acreage on both faults. The Elmo-Quinlan acreage bought by Gulf extends west of the old dry hole drilled several years ago by Humphreys on the McCoy farm.

The Marland Refining Company of Ponca City, Oklahoma, has probably shown more real interest in this East Central Texas wildcat leasing campaign than any single company, having taken up approximately 35,000 acres, with about 24,000 acres of this total located in two large blocks to the north and south of Wills Point in Van Zandt County. Many diamond core tests have been made during the past four months at various points between Navarro and Hopkins Counties by Marland, including more than half a dozen on the Wills Point acreage. These tests are drilled less than 1000 feet, and the cores

Three Companies Active In Jugo Slavia Drilling

Washington, D. C., Dec. 10.—At present there are but three companies carrying on oil prospecting operations in the Zagreb district of Jugoslavia, according to a report received by the Petroleum Division of the Department of Commerce from Consul J. F. McGurk, Zagreb, dated October 24. "Bitumen" d. d. (subsidiary of the Anglo-Persian Oil Company), which has been carrying on operations at Resetare, Slavonia, and Marinovac, Croatia, has abandoned drilling at Resetare and has ceased operations at Marinovac. This company will start drilling at Ormuz, Slovenia, where drilling has already been started by hand.

"Uljanik" d. d. (local company said to be financed by the Anglo-Persian Oil Company) has been carrying on operations at Bujavica, Slavonia. A depth of 810 meters has been reached without results other than a heavy flow of gas.

Anglo-Saxon Oil Company (subsidiary of the Royal Dutch Shell) has been carrying on drilling operations at Sedlarica, Slovenia. A depth of over 850 meters has been reached without success. It is rumored that this company will presently abandon its present location and start drilling near the old holes.

A recent press report states that some new production has been obtained in Slovenia, which, although relatively small, is larger than any previously obtained in the country.

Colonel Humphreys and Associates Will Drill Deep Test in Scurry County, Texas

Ft. Worth, Texas, Dec. 11.—Scurry County section of West Texas is to be given a deep test by Col. A. E. Humphreys of Mexia fame and associates on a block of 1840 acres located about one and one-half miles southwest of the wildcat test now being completed by The Loutex Corporation on the J. J. Moore ranch in the south end of the county. The Humphreys interests have given contract to Fred Carey to drill a cable tool test immediately on the Wellborn land in the south half of section 102, H. & T. C. railway survey, block 97. Among those interested in the wildcat adventure besides Col. Humphreys, are his two sons, Ira B. and A. E. Humphreys, Jr., and Frank Cox of Charleston, West Virginia. The nearest producing wells to this proposed test are about eight miles to the southwest in Mitchell County, where 17 wells are being pumped daily from pay at depths varying from 2930 to 3100 feet.

The Loutex Corporation's test on the Moore ranch, which is located in the southwest corner of the northwest quarter, section 116, block 97, encountered a heavy flow of non-inflammable gas at 1296 feet, and reported oil formations at 1771 to 1835 feet, 2370-90 feet and at 3020-50 feet. It was drilled to a total depth of 3576 feet, where some junk was lost in the hole, and on November 29 was given a shot of 280 quarts of nitro in lime formation from 3020-3180 feet. The hole bridged after the shot, and an effort is being made to remove the obstruction from the hole, while in the meantime oil is reported to be rising in the hole. This oil is credited with being of a higher grade than that found in Mitchell County wells. The non-inflammable gas production in this test at 1296 feet amounted to about 15,000,000 cubic feet, and continued to flow in large quantities after the hole had been carried to 2140 feet. At this depth a string of eight and a quarter inch casing was set, and a bradenhead installed on the eight and a quarter and 10 inch casings to divert the gas to a boiler to furnish direct power without steam to operate the standard tools. This arrangement worked out very satisfactorily and economically to the owners of the test, and most of the deeper drilling was done by the power furnished by the non-inflammable gas.

In Edwards County the Havoline Oil Company's wildcat test on the W. E. Weathersby ranch in section 21, I. & G. N. railway survey, block 5, has completed the work of setting five and three-sixteenths inch casing at 3540 feet and are now drilling ahead. This test was reported early in November with a showing of oil, but failed to increase when drilled deeper.

Leasing activity in Reagan and adjoining counties continues on a large scale with operators from distant fields taking protection acreage, which is comparatively cheap, although all the close in leases to the discovery well in Reagan County have been contracted for some months ago. The development campaign of the Big Lake Oil Company (Benedum-Trees interests), which purchased the first well and sixteen nearby sections of leases, is making good progress with two tests well under way and two rigs up. The location for the sixth test to be drilled on the 16 section block is in section 3, and due west of the oil producer. Test No. 2, which is located 800 feet west of the producer, is not meeting with success in removing the quantity of junk in the hole at 2765 feet, but the north offset to the discovery well is reported to have set a string of eight and a quarter inch casing at 2580 feet, and is now drilling below 2600 feet.

used to determine the depth of the lime formation. This diamond core drill is now engaged in making tests in the southeast corner of Kaufman County, where acreage has recently soared to the highest level. Marland has not made any announcements as to when the first test will be started on the Wills Point acreage, but it is expected that at least one will be under way before spring.

The southeast corner or Kaufman County and northwest extension of Henderson County, which lies due south of the former county, and both northeast of the Corsicana-Powell field, are generally looked upon as the most promising section for oil production in the entire territory involved in the late leasing campaign. The Humble Oil and Refining Company is reported to be examining titles on a block of 7200 acres in leases, extending on both sides of the Kaufman-Henderson County line to purchase an undivided half interest in the same from the U. S. Texas Oil Corporation. While the consideration involved in the deal has not been made known, it is understood that Humble is to have complete charge of developing the acreage, and will assume obligations to start at least one test before February, 1924. The deal will be closed by the close of the present week, according to Humble officials.

Although a number of tests are to be made by the various concerns holding leases in the territory northeast of the Corsicana-Powell field before many months elapse, the proposed test by Humble is the only one known to be planned before next spring.

The companies holding large blocks of acreage northeast of the Corsicana-Powell field and extending up to Hopkins County, include the following besides many individuals: Marland Refining Company, Boyd (Col. Humphreys) Oil Company, Pure Oil Company, Gulf Production Company, Tidal Oil Company, Sun Oil Company, Atlantic Oil Producing Company, U. S. Texas Oil Corporation, Humble Oil and Refining Company, Magnolia Petroleum Company and The Texas Company.

The U. S. Texas Oil Corporation has announced that a concrete dam is to be built immediately across Cedar Creek on the Guy Perry farm, about three-quarters of a mile south of the Kaufman-Henderson County line to impound water for use in drilling of wildcat wells when the campaign opens up next spring. This dam will be 80 feet wide and six feet high.

Wildcat Test Going Down In Bruce County, Ontario

Chicago, Ill., Dec. 9.—The Mulberry Creek Oil Company of this city is drilling below 200 feet in a tough yellow lime formation, in its test in Ontario. This well is located 125 miles north of Petrolia and Oil Springs on the Bruce Peninsula near Lion's Head, Bruce County, and is an attempt to prove the extension of the structure from which these districts are producing oil.

Nyman and Shaw, of Chicago, have charge of the drilling of the test and are using a turnbuckle outfit which they shipped from Kentucky. Ten inch casing has been set and the eight inch will be set at 550 feet.

Oklahoma Wildcats

ATOKA COUNTY—McPhearson et al's Wild 1, SWc NW 7-2-9, sd 2850 ft. Hanson et al's Dabney 1, C SE NW 17-4-11, sd 100 ft.

BECKHAM COUNTY — Bollion Oil Co.'s Green 1, C SW SW 34-10-24, sd 1360 ft. Ship et al's Githens 1, SEc NW 14-9-26, sd 3210 ft. Ship-Nash et al's 1, SEc NW 35-9-25, dr 2400 ft. J. A. Pringle's Burkholder 1, C NE NE 6-9-24, sd 3110 ft. Magnolia Pet. Co.'s Ezzell 1, NEc 36-9-24, dr 3443 ft. Turman Oil Co.s 1, SWc NE 4-8-22, dr 2754 ft.

BLAINE COUNTY—Okomo Oil Co.'s Edlemaier 1, 21-15-10, dr 625 ft.

BRYAN COUNTY—Lyon et al's Coombs 1, SEc SW NW NE 11-8-9, rig.

CLEVELAND COUNTY—Garr Oil Co.'s Holland 1, NEc SE 31-10-4, r 2570 ft.

CUSTER COUNTY—Hoover Oil Co.'s 1, NWc SE 34-13-14 sd 2510 ft.

COAL COUNTY—Basie Oil Co.'s Heck 1, SEc 18-2-9, rig. Bearman et al's Payte 1, SWc NW NE 32-2-9, sd 2780 ft. Guy Vaughn's Downard 1, NWc SW 16-2-10, sd 1200 ft; Nichols 1, SW 1-1-11, rig. Mc Phearson et al's Jamison 1, NWc NE NE SW 24-1-8, sd 300 ft.

GRANT COUNTY—Ossenbeck et al's Hoffman 1, SEc 23-29-3, cas collapsed 1800 ft. Marland Oil Co.'s Zich 1, SWc 7-28-3, dr 3450 ft. Walters O. & G. Co.'s Shephard 1, SWc NE 25-27-7, dr 3580 ft. Embry et al's Edward 1, C SE SE NW 20-26-4, fsh 900 ft. Alcorn Oil Co.'s Hubbard 1, C S L NW 12-26-2, r 2750 ft. Day Oil Co.'s Vannatta 1, SWc NW 8-26n-2w, sd 1270 ft.

GREER COUNTY—Western Nat. Gas Co.'s De Armond 1, NWc SW 23-7-23, sd 2015 ft, hfw.

HARMON COUNTY—Keystone Oil Co.'s 1, NWc SW 21-2-26.

HUGHES COUNTY—Flesher Pet. Co.'s Smith 1, NWc NE NW 8-9-12, set 6-in 3220 ft. Independent Oil Co.'s Alexander 1, NEc NW 23-8-10, dr 3525 ft. W. J. Thurber's Foster 1, SEc SW SE 5-7-8, dr 300 ft. Producers & Refiners' Marcome 1, SEc NW NE 14-7-8, Kingwood Pet. Co.'s Burnett 1, NWc NE SW 7-7-10, dr 5062 ft. Paraffin Oil Co.'s Love 1, NEc SE NE 13-7-12, sd 1970 ft. Middle States Oil Co.'s 1, NWc 13-6-11, dr 3510 ft.

JACKSON COUNTY—Douglas Oil Co.'s Jackson 1, NWc SW SE 20-3-20, r 3080 ft. J. D. Wade's 1, C SW NW 36-2-23, r 1550 ft.

JEFFERSON COUNTY — Magnolia Pet. Co.'s Peck 1, C NW SW NW 4-3-6, dr 1875 ft. Humble Oil & Ref. Co.'s Lewis 1, NEc NE SE 16-6-7. Grant et al's Skelton 1, C NE NE NW 22-3-6w, dr 770 ft.

KAY COUNTY—Comar & Gypsy Oil Co.'s Garrett 1, C NE NW SE 31-27n-2e, hfw 2241 ft set plug to test. Ostot Dev. Co.'s Rohos 2, C NW NW SE 3-27-1, dr 780 ft. U. S. Smelter Co.'s 1, NWc NE SW 15-27-1, dr 2330 ft. Blackwell Oil & Gas Co.'s Kumber 1, C NE SE 9-27-1, gas, mudding off to deepen; Humphreys 2, C NW NW SW 16-27-1, rig.

What Does It Cost

To Drop A String of Tubing

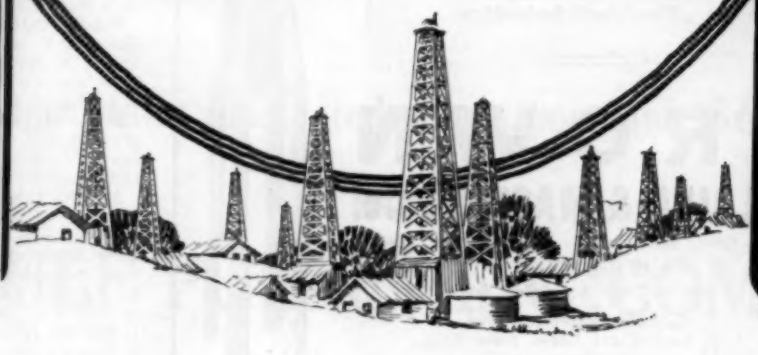
?

If you want to prove that low price pipe and low cost pipe are vastly different, consider what you pay each time a string of cheaper tubing parts

READING IRON COMPANY
READING, PENNA.
Oil Well Supply Co., Distributors

EST. READING 1848

READING
GUARANTEED GENUINE
WROUGHT IRON PIPE



Alcorn Oil Co.'s Mills 1, C NW SE 24-26-1, dr 1660 ft; Hubbard 1, C S L NW, r 2750 ft. Amarada Pet. Co.'s Elledge 1, NEc SE 32-27-1, dr 2100 ft. Guyles & Daniels' Chism 1, SEc NW 23-29-2, dr 2025 ft. Spencer et al's Klink 1, SEc NW NW NW 21-29-1, dr 1030 ft. Brown & Wood's Lowery 1, NEc SW 11-26-1, sd 1245 ft. Mid-State Pet. Co.'s Cardin 1, SWc SE 8-28-2, sd 2800 ft for 6-in.

KIOWA COUNTY—Connor et al's 2, NEc NW NW 34-7-16, dr 1435 ft. Kiowa Dev. Co.'s School 2, NWc NE 33-6-20, dr 960 ft.

LINCOLN COUNTY—Heinze et al's Horton 1, SWc NE 7-14-4, sd 3187 ft. Sun Ray Oil Co.'s Gallagher 1, C N L SE SE 18-13-5, dr 1940 ft.

LOGAN COUNTY—Buford-Brim Oil Co.'s Newman 1, NWc NE 32-19-3, collapsed cas 2480 ft.

LOVE COUNTY—Wickenhiser et al's Beal 1, NEc SE NW 13-5-3, sd 2465 ft. Cook Oil Co.'s Westheimer 1, C SE SE NW 4-5-3, dr 2930 ft. Reid-Davenport Oil Co.'s Gray 1, NEc 9-7-1, sd 3002 ft.

McCLAIN COUNTY—Day Oil Co.'s Ball 1, SEc NW NE NE 9-5-3, dr 690 ft.

McCURTAIN COUNTY—Fred Ptak's Wilson 1, NWc SE 15-8-25, sd 2700 ft.

MARSHALL COUNTY—Humble Oil & Ref. Co.'s Scott 1, SEc NE SW 22-6-4, dr 2790 ft. Magnolia Pet. Co.'s Everett 1, C NE NE SE 36-7-5, dr 1880 ft.

OKLAHOMA COUNTY—W. R. Ramsey's Hendricks 1, SEc 8-12-1, cementing 3655 ft; salt water. Firestone Oil Co.'s School 1, NWc SE 36-11-3, sd 3345 ft. Big Three Oil Co.'s Wild 1, SWc NE 31-12-12, rig down 1390 ft.

PITTSBURGH COUNTY — Paraffin Oil Co.'s Howell 1, SWc NE 15-10-2, dr 2423 ft. H. 1976 ft.

PONTOTOC COUNTY—Harper et al's Dener 1, NWc SE SE 19-5-7, dr 100 ft. Smith et al's Norris 1, SWc SE 34-4-6, dr 1920 ft.

POTTAWATOMIE COUNTY — Ossie Oil Co.'s Howell 1, SWc NE 13-10-2, dr 2423 ft. H. G. Gwinnup et al's Floyd 1, SWc SE 13-11-3, dr 1410 ft. Magnolia Pet. Co.'s Bredinberg 1, C SE SW NW 18-7-5, dr 2660 ft. No. Am. Oil Co.'s Madgett 1, NWc 25-10-4, rig. Dave Derrick's McGahey 1, SEc 10-6-2, dr 2810 ft.

ROGER MILLS COUNTY — Kellogg Oil Co.'s Dr. Seba 1, C E L NE NE 10-16-21, dr 1600 ft. Twin Hills Oil Co.'s McClure 1, NW 15-15-26w dr 600 ft.

SEMINOLE COUNTY—H. Taylor's Johns 1, SEc NE 34-9-6, sd 2368 ft. Independent Oil Co.'s Ahaisse 1, NEc SW 15-9-8, fsh 3240 ft. W. E. Phillips et al's Davis 1, SEc NE NE 28-9-8, dr 1975 ft. Ossenbeck et a's Davis 1, C SW NE 10-8-7, sd 3330 ft. Wm. McDougall's Belle Dindy 1, SW SW 20-6-7, dr 1636 ft. T. B. Slick's Mingo 1, NWc NE 25-6-6, dr 2295 ft. Maxwell et al's Charty 1, C NE NW 36-6-6, rig. Link Oil Co.'s Carolina 1, C SE NW 14-6-7, fsh 1875 ft.

TILLMAN COUNTY—Luffborough et al's Finley 1, SWc NE SW NW 23-2-7, sd 960 ft. Okla-Tex Oil Co.'s Owen 2, NEc SE SE NE 7-5-14, dr 1510 ft. Continental Oil Co.'s Riverbed 4, SWc NW 8-5-14, co 1696 ft. Marschall Bros.' Riverbed 1, SWc NE NE 8-5-14w, rig.

WASHITA COUNTY—R. B. Hartman's 1, NEc SW SE 23-9-7, sd 3030 ft. Santrock Brothers' 1, SWc NE 20-8-16, fsh 2465 ft. McCoy et al's Prettears 1, C SW SW NE 13-8-10w, dr 50 ft.

ANNOUNCING

OUR

TULSA

RENTAL BRANCH

We are pleased to announce that we have opened a rental branch at 310 East Third Street, Tulsa, Okla., and that a complete stock of our fishing tools, including the DEVIL'S PITCHFORK and the DEVIL'S STEEL HAND will be carried.

Our rental branch manager is prepared to give prompt and efficient service at all times in connection with supplying fishing tools.

Every day new triumphs are being recorded by both the Devil's Steel Hand and the Devil's Pitchfork. A recent example was in the Bristow field when B. K. Maitland lost 2 underreamer lugs, the mandril, the spring and the key in the hole. He procured a DEVIL'S STEEL HAND and in 2 hours had fished out every piece.

They can't be beat!

BROWN

WELDING & MACHINE CO.

Main Office and Factory: Breckenridge, Texas

Rental Branch
310 E. Third St., Tulsa, Okla.

California Representative:
J. F. Larkin, 811 Loews State Bldg.,
Los Angeles, Cal.

Kansas Wildcats

BARBER COUNTY—B. B. Brown 1, NWc SW NW 33-30-14, dr 2560 ft.

BARTON COUNTY—Cheyenne Oil & Gas Co.'s Sooy 1, SWc SW 27-18-12, fsh 3525 ft. McMinn et al's Baker 1, SWc 5-18-13, dr 750 ft. Haynes et al's 1, SWc SW 31-18-12, spd and sd. H. W. Nieswanger's Everleigh 1, SW SE 1-18-12, lcn; Weiker 1, NWc SE NW 2-19-12, dr 350 ft. Mountain States Oil & Gas Co.'s 1, SEc NE 22-18-13, fsh 2300 ft, show gas. McMahan & Samptec 1, NWc 19-19-12, rig.

TAYLOR COUNTY—J. F. Baggas et al's Younkan 1, NWc SE 1-9-4, fsh 2560 ft.

FINNEY COUNTY—Garden City Oil & Gas Co.'s Wann 1, SEc SE 36-21-30, sd 2890 ft.

GEARY COUNTY—Liberty Texas Oil Co.'s Wright 1, NEc NE, 9-12-6, sd 750 ft. Foster 1, NEc SW 30-16-6, sd 2000 ft.

JEFFERSON COUNTY—Northern Counties' Edwards 1, SEc NW NW 13-9-19, fsh 3400 ft.

KINGMAN COUNTY—Hale et al's Garner 1, SWc NW 34-27-1, sd 2543 ft.

OSBORN COUNTY—McKnight et al's Worley 1, NWc NW 34-10-15, rig. Delhi Oil Co.'s Forman 1, SWc SW 20-10-11, sd 3250 ft.

OSAGE COUNTY — Sharpless & Starke's Kirklen 1, SEc NW 36-17-14, lcn. Rodgers & Bittler's Berthe 1, SEc NW 28-17-15, lcn. Mul Vit Dev. Co.'s Neil 1, NEc NW SW NE 8-17-17, sd 2735 ft. Sharpless & Starke's Williams 1, SEc NW NW 12-18-14, lcn. Rodgers & Brown's 1, NEc SW 15-16-16, sd 1500 ft. Foster Oil Co.'s 1, NEc SW 8-16-17, sd 1470 ft.

POTTAWATOMIE COUNTY—Crawford et al's Stewart 1, C E L SE SE SE 17-9-12, rig; Greischabert 1, SWc SE SW SW 31-9-12, rig. St. Mary's 1, SWc 11-10-12, sd 2290 ft.

RENO COUNTY—Haynes et al's O'Halloran 1, NWc SE NW 28-25-6, sd 2610 ft. Travis et al's Williams 1, NE SW 5-26-4w, rig.

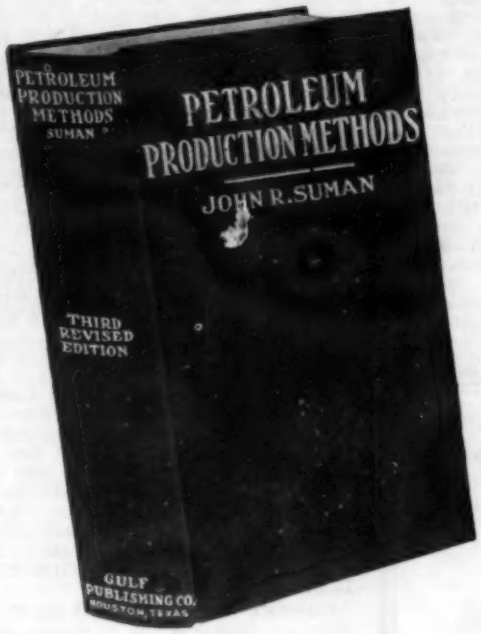
REPUBLIC COUNTY—Mitchell Oil & Gas Co.'s Walker 1, SEc NE NE 23-2-1, dr 2025 ft.

RILEY COUNTY—Ritchie et al's Boyle 1, SEc 36-7-4, sd 2600 ft. Walton Oil Co.'s Thierer 1, NWc 20-10-2, dr 1500 ft. Pawnee O. & Gas Co.'s Marks 1, SWc NE NW 26-10-6, sd 1700 ft.

SEWARD COUNTY—C. T. Development et al's Wood 1, NWc SE 34-34-3½, sd 700 ft. Seward O. & G. Co.'s Seeley 1, NEc NW 20-33-33, co 2427 ft, show oil and gas.

SUMNER COUNTY—Champlin Ref. Co.'s Hiltcock 1, NWc NE 16-30-1, sd 3562, good show oil, preparing to shoot. S. H. E. Dev. Co.'s Stout 1, SEc NE 13-31-2, sd 3000 ft. Jack Robinson et al's Barker 1, NWc 2-31-1, lcn. Brady Brothers' Turpin 1, SWc 13-32-2, sd 3370 ft to shoot. Collins & Frantz's Young 1, SEc NE 33-33-2, spd and sd. Collins, Claude & Nelson's Dillion 1, NEc 34-34-1, rig.

TREGO COUNTY—Morton et al's Kyser 1, C E½ 9-11-22, sd 1406 frozen cas. Keys Pet.



The Third Edition of

PETROLEUM PRODUCTION METHODS

By

JOHN R. SUMAN

Completely revised and brought down to date.

Eighty pages of new material added.

Among many others the following new features are especially worth noting:

IMPROVED ROTARY DRILLING METHODS—

Core Drilling, latest "Dope" brought right down to date.

Mud-Laden Fluid—Newest features fully discussed.

Latest Drilling Devices fully described: The "Make and Break" rotary. Collapsible bits and other new bits. Weight indicators.

DIAMOND DRILLING FOR OIL—EXPLORATION AND EXPLOITATION.

What do you know about this newest device being used by oil companies all over the world? This system fully described and illustrated.

COST OF POWER FOR DRILLING—VARIOUS METHODS.

LATEST COST DATA ON DRILLING IN VARIOUS FIELDS.

TEMPERATURE OF DRILL HOLES.

SWABBING.

EVAPORATION LOSSES ON STORED OIL AND HOW TO STOP THEM.

HEAT TREATMENT FOR DRILL BITS.

LATEST "A. P. I." TABLES

for correcting gravity readings according to temperature reading. These tables are absolutely new and have not been published elsewhere to date.

Condensed Outline of Contents

CHAPTER I—
Drilling methods—all systems fully described.

CHAPTER II—
Method of shutting off water—full description of cementing methods and use of packers.

CHAPTER III—
Operation of properties and handling of production.

CHAPTER IV—
Treating emulsions—a very important subject thoroughly discussed.

CHAPTER V—
The use of electric power. This newest kind of power for oil field use thoroughly described in all of its various phases.

CHAPTER VI—
Pipe lines—construction and operation, friction losses, etc.

CHAPTER VII—
Tanks—construction of, preparation of gauging tables and prevention of evaporation losses.

CHAPTER VIII—
Tables and useful information condensed. Information on various subjects which oil men are constantly needing for reference.

680 pages, fully illustrated, cloth, postpaid, $6.00

Send Check to

THE GULF PUBLISHING COMPANY

P. O. BOX 1307 **HOUSTON, TEXAS**

Say you saw it in The Oil Weekly

Co.'s Walsh 1, NWc SE 5-11-25, sd 1700 ft; Walsh 2, SWc NE SW 5-11-25, sd 1550 ft.

WASHINGTON COUNTY—Barnes O. & G. Co.'s Wickham 1, SEc SW 9-5-5, sd 1305, tools moved out.

Central West Texas Wildcats

COMPLETIONS

Company, Well and Location		Initial Production Bbls.	Depth
Brown County—			
Scott & Anderson W. R. Chambers 1		*	2900
Culberson County—			
G. W. Gosserts Sayles 1		*	460
T. M. Owens Jones 2		*	3170
Palo Pinto County—			
R. B. Thomas Fee 1	¶1		3595

DRILLING REPORT

BROWN COUNTY—Carlton-Tippett et al's O. B. Fomby 1, junked hole, td 1315 ft. Joe Cullinan et al's G. W. Pickett 1, sd 1135 ft. Crabb, McNeil & Bryant's B. W. McDonough 2, lcn. G. F. Gillman et al's J. W. Newton 4, estimated 25 bbl. pumper, pay at 1284-96 ft. Gillette et al's Prather 2, estimated 35 bbl. pumper at 1298-1310 ft. Infield Pet. Co.'s T. M. Windham 4, fsh tools 1800 ft; Windham 5, rigged up. Leonard et al's Prather 2, sd 2275 ft. Ben O. Madison's Jack Smith 1, plugging to abn, td 705 ft. Omaha Southern Oil Co.'s G. B. Gaines 2, sd 1690 ft. Pennant Oil & Gas Co.'s W. B. Strickland 1, sd 2605 ft. Price et al's Blair 2, sd 2910 ft.

HOOD COUNTY—Corsicana Oil & Ref. Co.'s (was Hardy Sitton) I. A. Rylee 1, sd 570 ft.

PALO PINTO COUNTY—Bankhead & Wheeler's Bankhead 1, sd 275 ft. Ed Costello's Costello 1, fsh tools 2100 ft. Clark & Burch's Mrs. L. F. Conklin 1, sd 3955 ft. Jack Dalton Oil Co.'s R. S. Dalton 2, sd 4025 ft; Dalton 5, sd after shot 4060 ft. Danielson Trustee's (S. E. J. Cox) Arch Hemphill 1, sd 3755 ft. Gibson, Sinclair & Strong's J. T. Holt 1, sd 4260 ft. E. Hess et al's Crocker 1, dr 465 ft. Jones et al's Jones 1, dr 1300 ft. S. W. Manning et al's R. Hitson 1, sd 3640 ft. Nelson Oil Co.'s Finch 2, co 4160 ft. Pender Prod. Co.'s L. C. Slemmons 1, sd 4005 ft. Phillips & Graham's J. A. Caudill 1, sd 2350 ft. Republic Prod. Co.'s Stuart Bros. 1, plugging to abn 2865 ft. Simms Oil Co.'s Costello 1, sd 3400 ft. Scott & McClure's Riverbed 1, sd 3712 ft; Riverbed 2, rigged up. H. L. Singleton et al's W. Holt 1, sd for wire line 2655 ft. Texas Pacific Coal & Oil Co.'s M. E. Robinson 1, dd co 3583 ft; Stuart Bros. 144, fsh cas after shot 1695 ft; J. H. Robinson 7, lcn. Youkan Oil & Gas Co.'s Seaman 1, sd 3965 ft. Zada Belle Oil Co.'s G. N. Weldon 1, dr 3200 ft.

BORDEN COUNTY—Kesselman Dev. Co.'s A. J. Long 1, rigged up.

BREWSTER COUNTY—Arco Dev. Co.'s H. L. Kokernot 1, sd 3765 ft. Brewster Oil Co.'s H. L. Kokernot 1, sd 2535 ft. Portland Oil Synd.'s State 1, sd 2740 ft. Nine Points Oil Co.'s Paralto & Finnell 1, sd 1570 ft. Marathon Oil Co.'s Nigger Creek 1, sd 2350 ft; Wilson 2, sd 4000 ft.

COKE COUNTY—Ace Oil Co.'s W. C. Locke's 1, spd and sd. Adkins Oil Co.'s J. R. Smith 1, lcn. Mexia-Equitable Oil Co.'s W. J. H. Hodges 1, sd 2505 ft.

CONCHO COUNTY—Signal Oil Co.'s Sam Waring 1, dr 3030 ft. W. O. Schultz Oil Co.'s Schultz 1, sd 3225 ft.

CRANE COUNTY—Texas-Mexia Drilling Co.'s W. M. Waddell 1, dk abn.

CROCKETT COUNTY—Crockett Drilling Co.'s J. M. Shannon 1, dr 1795 ft; Shannon 2, lcn; Robt. Massey 1, sd 510 ft. Enders-Smith & Co.'s University 1, sd 810 ft.

CULBERSON COUNTY—J. D. Wesner's Mack Sayles 1, sd 3105 ft. Consolidated Sulphur Co.'s Johnson 1, sd 115 ft.

DAWSON COUNTY—Lamesa Oil Co.'s Jno. Burns 1, sd 2155 ft.

ECTOR COUNTY—Farmers Oil Co.'s Andy Newham 2, changing from cable tools to shot core drill for potash test, td 1400 ft.

EL PASO COUNTY—Cinco Minas Co.'s Burns & Knight 4, dr 4030 ft.

FISHER COUNTY—Pyron Oil Co.'s J. S. McCall 1, sd 2135 ft.

GLASSCOCK COUNTY—Cushing Ranch Drilling Assn.'s W. F. Cushing 1, pul cas to abn 4515 ft; W. H. Sparkman 1, sd 1950 ft. General Oil Co.'s L. S. McDowell 4, sd 3685 ft. Associated Ref. & Prod. Co.'s C. I. Brunson 1, sd 2935 ft.

HUDSPETH COUNTY—Boole Oil Assn.'s Gardner et al 1, dr 1510 ft. Hueco Basin Oil Co.'s University 1, sd 2555 ft.

HOWARD COUNTY—Big Springs Oil Co.'s Mabel O. Quinn 1, sd 2640 ft.

JONES COUNTY—Anson Oil & Dev. Co.'s C. B. Brown 1, sd 1855 ft. C-H Oil & Dev. Co.'s J. A. Cullom 1, sd 3160 ft.

LOVING COUNTY—Ramsey Prod. Co.'s Russell 1, sd 4485 ft; Russell 2, sd 815 ft.

MITCHELL COUNTY—The California Co.'s W. H. Butler 1, rigging up; A. L. Miller 2, spudding; Earl Morrison 1, sd 3925 ft; Morrison 2, rig; J. F. Carey et al's Earl Morrison 1, timbers. Colorado-Texas Pet. Co.'s W. L. Foster 2, sd 2625 ft. Fensland Oil Co.'s W. H. Badgett 1, plugging to abn after shot 3250 ft. C. F. Kelsey et al's W. H. Badgett 1, co after shot 3120 ft. S. A. Sloan Oil Co.'s Smart 2, dr 2295 ft.

PECOS COUNTY—Trans-Pecos Co.'s Helen L. Thomas 1, rigged up; Bennette et al 1, dr 815 ft; Turney 1, dr 1615 ft; Johnson 1, sd 3520 ft. Southern States Lease & Prod. Co.'s J. M. Odem 1, sd 1305 ft. Oregon-Texas Oil Co.'s Turney 1, sd 3025 ft.

PRESIDIO COUNTY—Claude Byler's Toole Estate 1, sd 205 ft.

REAGAN COUNTY—Big Lake Oil Co.'s (was Texon) University 2, fsh junk 2765 ft; University 3, set 8¼-inch cas 2580 ft, dr 2640 ft; University 4, rigged up; University 5, rigged up; University 6, lcn.

REEVES COUNTY—Dixieland Oil Co.'s Oates 2, dr 4505 ft. W. S. Troy et al's H. G. Hersheusen 1, sd 415 ft. Bell Reeves Oil Co.'s

Petroleum and Its Products

High-Grade—Uniform Quality

Gasoline, Kerosene, Fuel Oil, Naphtha, Distillates

Sunshine State Oil & Refining Co.

(Incorporated)

Offices, 1019-1025 American National Bank Bldg. Wichita Falls, Texas

a reinforced center sill

456,000 ft. lbs. stronger than the type sill in general use, and constructed materially lighter. Patented and used only in "Pennsylvania" Tank Cars.

The Pennsylvania Tank Car Company

(Builders of Tank Cars)

Pennsylvania Car Company (Railway Cars Built, Rebuilt and Repaired)

Pennsylvania Tank Line (Lessors of Tank Cars)

Sharon, Pennsylvania

New York St. Louis Kansas City Tulsa Houston Beaumont Casper San Francisco

Findley et al 1, sd 1540 ft. El Paso Saragosa Oil Co.'s George Wirt 1, sd 540 ft. Parker-Hancock Oil Co.'s Johnson 1, sd 1930 ft. Willoughby Pet. Co.'s W. D. Cowan 1, sd 610 ft. Rodenbaugh & O'Connell's W. D. Casey 1, sd 845 ft. Pico Pet. Co.'s Johnson 1, sd 1930 ft. Texas Drilling & Dev. Co.'s Pecos Valley 1, sd 1105 ft.

RUNNELLS COUNTY—Safety First Oil Co.'s Allen 1, ur 5-inch cas 3920 ft. Russell Prod. Co.'s Russell 2, sd 2500 ft.

SCHLEICHER COUNTY — Paragon Oil Co.'s B. M. Boyd 1, sd for tools 3055 ft.

SCURRY COUNTY—The Loutex Corp.'s J. J. Moore 1, showing considerable oil in hole, co after shot 280 quarts in lime 3020-3180 ft, td 3576 ft. Col. A. E. Humphreys et al's Wellborn 1, lcn. Camp Springs Oil & Ref. Co.'s L. E. Howell 1, lcn; W. R. Quinn 1, sd for cas 2035 ft; W. V. Jones 1, sd 605 ft. Hermleigh Oil & Gas Co.'s J. W. Burris 1, sd 2965 ft. Stanton Oil & Gas Co.'s J. W. Riley 1, sd 3505 ft. C. C. Brandon's J. A. Kemp 1, lcn. J. O. Guinn's L. Sturdevant 1, lcn.

STERLING COUNTY—Co-Operative Lease & Dev. Co.'s Douthitt 1, sd 1815 ft. Chicago Oil & Gas Co.'s B. C. Durham 1, sd 1365 ft. Fidelity Oil Co.'s C. R. Hull 1, sd 1215 ft. Concho River Drilling Assn.'s George McIntyre 1, sd 505 ft.

TAYLOR COUNTY — Abilene-Texas Oil Co.'s J. C. High 1, sd 2135 ft. Sanger Oil & Ref. Co.'s Hall 1, sd 2865 ft.

TERRELL COUNTY—Southwest Texas Oil & Gas Co.'s S. W. T. 1, sd 3470 ft. Pittsburgh-Western Oil Co.'s Chas. Downey 1, sd 1260 ft.

TOM GREEN COUNTY—Ranger Investment & Dev. Co.'s Harris 1, ur cas 3125 ft.

VAL VERDE COUNTY—East Del Rio Oil Co.'s E. F. Russell 1, fsh 1800 ft. G. Cook et al's Bedell Moore Estate 1, sd 1255 ft. Independent Operators' Whitehead 1, sd 1805 ft. Re-Clamation Oil Prod. Co.'s J. B. Moore 1, sd 2630 ft.

WARD COUNTY—Arthur Pitts Oil Co.'s Soda Lake 1, sd 2205 ft; River 1, sd 4675 ft. Cook & O'Brien's G. W. O'Brien 1, sd 1175 ft. Trans-Pecos Oil Co.'s Longnecker 1, sd 1765 ft.

North Texas Wildcats

COMPLETIONS

Company, Well, Location—	Initial Production Bbls.	Depth
Clay County—		
Lone Star Gas Co. Edrington 7....	*	2525
Ross & Webb J. H. Stine 1.....	¶1	1620
Montague County—		
The Texas Co. I. A. Gist 1-A.....	¶35	850
Wilbarger County—		
Knight & O'Dell A. D. Potts 1....	*	2000

DRILLING REPORT

(Note—This report does not include tests that have been shut down indefinitely.)

BAYLOR COUNTY—Bob Waggoner's W. H. Portwood 1, dr 1700 ft. Wurtz et al's Porter Ranch 1, sd 1010 ft.

CLAY COUNTY—Crude Oil Producing Co.'s Kinder 1, dr 1040 ft. J. T. Cumley et al's J. D. Stine 1, dk. E. C. D'Yarmett's Carpenter 1, sd 2000 ft. Gulf Prod. Co.'s H. Boddy 1, fsh 2800 ft; C. M. Worsham 3, dr 600 ft. Lone Star Gas Co.'s W. G. Skelly 9, dr 1100 ft; Panhandle Oil Co. 7, dr 1650 ft. Nebraska Oil & Gas Co.'s W. H. Myers 1, dr 3290 ft. Nix-Moore Oil Co.'s F. M. Hull 1, dr 1260 ft. Seaboard Oil & Gas Co.'s L. Zihlman 1, dk.

COOKE COUNTY—Big Indian Oil Co.'s B. W. Davis 1, sd 2790 ft. Red River Drilling Co.'s Whaley Jones 1, co 1300 ft.

DENTON COUNTY—Hill Crest Oil & Dev. Co.'s J. H. Rayzor 1, sd 1350 ft.

GRAYSON COUNTY—Zee Tex Oil & Dev. Co.'s G. W. Cannon 2, sd 2960 ft; Griffin 1, sd 2225 ft.

HARDEMAN COUNTY—Frizell Oil Co.'s M. S. Winbury 1, sd 3040 ft.

JACK COUNTY—Duncan et al's M. A. Woodward 1, fsh 1300 ft.

KING COUNTY—Banks Oil Co.'s J. R. Hailey 1, sd 1630 ft.

KNOX COUNTY—Brazos Bend Oil Co.'s J. E. Clark 1, dr 1850 ft. White Oil Corp.'s Ward Ranch 1, sd 2800 ft.

MONTAGUE COUNTY—Amerada Oil Co.'s R. D. Beasley 1, fsh 3025 ft. Bowie Chief Oil Co. et al's C. H. Boedeker 1, sd 2725 ft. Gulf Prod. Co.'s T. Benton 1, cas trouble 2850 ft. Humphreys Oil Co.'s J. W. Maddox 3, sd 1950 ft. Mascho Oil Co.'s J. L. Howard 1, set cas 2125 ft. Spencer & D'Yarmett's Wilson 1, sd 1080 ft. Texon Oil Co.'s L. Crenshaw 1-A, dr 2220 ft; L. Crenshaw 1-B, sd 1225 ft. The Texas Co.'s C. W. Rucktashal 1, dk.

THROCKMORTON COUNTY—Ashcraft et al's Polk County School land 1, sd 1000 ft. Monroe Prod. Co.'s R. S. Ray 1, dr 75 ft. J. H. Richardson et al's Reynolds Cattle Co. 1, dr 945 ft.

WILBARGER COUNTY—Byrne & Co.'s B. N. Cordor 1, sd 1960 ft. Herrington & Robinson's McCaleb 1, reset cas 2100 ft. Noble Oil Co.'s W. T. Waggoner 1, dr 1000 ft. South Vernon Oil Co.'s W. H. Stephens 1, sd 1570 ft.

Texas Panhandle Wildcats

(Note—The drilling report below does not show wells that are shut down indefinitely.)

ARMSTRONG COUNTY—Magnolia Pet. Co.'s "J. A." Ranch 1, dr 3250 ft.

CARSON COUNTY—Culberson Bros.' V. B. Armstrong 1, sd 175 ft. Gulf Prod. Co.'s S. B. Burnett 3, fsh 3150 ft. Humphreys Oil Co.'s J. M. Sandford 1, fsh 2535 ft. W. W. Silk et al's S. B. Burnett 3, dr 780 ft. The Texas Co.'s Mary C. Burnett 1, sd 40 ft; S. B. Burnett 3, dr 450 ft. Tipton Stone et al's McConnell 1, sd 3028 ft.

GRAY COUNTY—W. H. Holmes et al's J.

"RATHOLING" AHEAD

WHEN "GE" BEGAN MAKING OILWELL DRILLING AND PUMPING EQUIPMENT IT DIDN'T OFFER IT TO THE TRADE UNTIL IT HAD COMPLETED ITS OWN EXPERIMENTING.

IT "RAT HOLED" AHEAD. TODAY IT OFFERS

SATISFACTION ECONOMY

IN DRILLING AND PUMPING EQUIPMENT

Southwest General Electric Company

Dallas El Paso San Antonio Tulsa Houston Oklahoma City

Cosden & Company

HIGH GRADE

PETROLEUM PRODUCTS

TULSA, OKLAHOMA

Our Services—

MANY OIL Concerns and Dealers in Oil Well Supplies are intently studying, at this time, the opportunity for intelligent refinancing.

We offer our services, our resources, and our extensive Banking experience, to further your business interests and increase your usefulness to the community.

Come and see us.

A Bank of Personal Service

Commercial National Bank

Shreveport, La.

S. Morse 1, ur cas, td 915 ft. The Texas Co.'s G. H. Saunders 1, dr 2220 ft.

HANSFORD COUNTY—A. G. Higgins et al's C. O. Hitch 1, sd 50 ft.

HEMPHILL COUNTY—Piney Oil Co.'s Hopkins 1, dr 2720 ft.

HUCHINSON COUNTY—Coline Oil Co.'s M. Sandford 1, dr 3200 ft. Humphreys Oil Co.'s Johnson Bros. 1, dr 2600 ft. Montgomery Oil Co.'s Johnson Bros. 1, set cas 1750 ft. Plains Oil Co.'s J. F. Weatherly 1, sd 3260 ft. Producers & Refiners Co.'s L. Bivens 1-B, dr 1000 ft.

MOORE COUNTY—Producers & Refiners Co.'s Masterson 1, lcn.

POTTER COUNTY—Producers & Refiners Co.'s L. Bivens 1-A, sd 2260 ft; Bivens 2-A, ur 1108 ft; Masterson 2, dr 2915 ft.

ROBERTS COUNTY—Roy Schenck et al's O. Laughlin 1, lcn.

WHEELER COUNTY—Skelly Oil Co.'s Davis Bros.' 1, sd 2580 ft. H. C. Tyrell et al's F. E. Sheldon 1, fsh 1100 ft. J. Whittington's Williams & Laycock 1, sd 2145 ft.

Coastal Wildcats

ANGELINA COUNTY—Jennings et al Henderson-White 3, lcn. Paggi et al's Henderson-Holman 2, lcn.

AUSTIN COUNTY—Texas Co.'s Pomykal 1, showing of oil, bailed dry at 1439 ft.

CHAMBERS COUNTY—Houston Oil Co.'s J. J. Mayes Est. 1, dr 1523 ft, in shale.

HARRIS COUNTY — Texas Exploration Co.'s Warren 13, pumping; Warren 15, dr 1760 ft; Warren 16, spudding in.

JACKSON COUNTY—Vanderbilt Oil Co.'s Seliner 1, sd.

JEFFERSON COUNTY—Rycade Oil Corp.'s McFaddin 2, dr 3506 ft.

MATAGORDA COUNTY — Rycade Oil Corp.'s Myers 1, dr 3160 ft; Hudson 2, dr 2186 ft.

San Antonio District Wildcats

ATASCOSA COUNTY—Atascosa Oil & Gas Co.'s Peelei 1, dr. De Lange-Eiser Co.'s Tom 2, setting 8-in cas.

JIM HOGG COUNTY—Las Animas Oil Co.'s Holbein 1, dr; Holbein 3, dk. Miami Balderas Oil Co.'s 1, dr. Revere Oil Co.'s Davenport 1, dr. Diamond S Oil Co.'s Doering 1, dr below 3080 ft. Homer & Tyson's Tyson 1, recementing. Weber Oil Co.'s Holbein 3, dr 2885 ft. Fresno Oil Co.'s Hinnant 1, sd 2500 ft. Caprock Oil Assn.'s Nolkemper 1, cas set. Humble Oil Assn.'s East 1, dr 3020 ft. J. W. Pippin's 2, testing at 1135 ft.

LIVE OAK COUNTY—Lobo Oil Co.'s Reagan 6, dr 1006 ft. Harkey Oil Corp.'s Herring 1, dr 760 ft. McCoy's Ross Murray 3, lcn.

MAVERICK COUNTY—Eagle Pass Oil Co.'s 1, sd; 2, dr. Southern States Indio 1, dr.

MEDINA COUNTY—Mayor Wheless' Jose de la Roche 1, dr. The B. J. K. Co.'s Adams 1, dr. California-Medina Assn.'s Rothe 1, dr below 2000 ft. McBride Drilling Co.'s Adams 1, sur. 13, setting cas 945 ft. Medina Oil Co.'s Martin 1, sd. O'Bryan et al Nixon 1, sur 14½, dr below 355 ft. Charles Jackson et al's Adams 1, sur 12, lcn. Jake Wolff & Ross Louis Moefield 1, sur 532, bailing. Young et al Tom Bendle 1, dr below 600 ft. William Metzker's Ward 1, dk. Carl Bros.' Smith 1, dr 600 ft. J. F. Carl's 2, sur 14, lcn. Fuch's Jungman 1, sur 13, dr 200 ft. Herman Haught's 1, sur 459, dr 600 ft. Dr. Brown et al's Adams 1, sur 12, dr 350 ft.

McMULLEN COUNTY—Pioneer Prod. Co.'s Lowe 1, dr. Burt Oil Co.'s Calliham 1, down 1200 ft. San Balt Pet. Co.'s Stitz 2, cemented at 689 ft. Charles G. Bowers' Fisher 2, dr below 670 ft. Pioneer Consolidated Pet. Co.'s Martin 1, dr 1681 ft. Lightfoot & Hill's Aycock 1, dr 1500 ft; Stitz 1, coring. Dilliham & Thorman's Calliham 1, coring at 811 ft. Frio Oil Co.'s Calliham 2, showing oil. Corpus Christi Oil Co.'s Barnes 2, dr 954 ft. W. E. Elliott's Stitz 1, rigging up.

SAN PATRICIO COUNTY—Aransas Pass Live Oak Ridge Oil Co.'s Sigmund 3, dr. Rockport Oil Co.'s 2, dr.

STANDARD

Seamless Casing

Equipped With Seamless Steel Couplings

6-⅝" and smaller

Prompt Delivery

Better than ordinary casing for shallow wells; an absolute necessity for deeper holes.

Standard Seamless Tube Co.

Pittsburgh, Pa.

Guaranteed By 30 Years of Experience

Every NO-CO-RO Ball and Seat is backed by thirty years of experience in manufacturing oil well pumping equipment.

Since being put on the market, NO-CO-ROS have consistently proved that they will stand up under the worst acid water and sand conditions. Hard work cannot break them.

Made from a NO-CO-RO alloy steel, NO-CO-ROS are absolutely guaranteed against rust, corrosion or imperfect fits. They will give many times the service of any other make.

Test them on your own well. You can order from your supply house or direct from us.

Manufactured by

NORRIS BROS., Inc.

Manufacturers of Oil Well Pumping Equipment

Robinson, Illinois

NORRIS

Rotary Being Given Tryout On Panhandle Wildcat Well

Amarillo, Texas, Dec. 11.—The use of rotary equipment by W. W. Silk and others in drilling their third test on the S. B. Burnett estate in section 115, Carson County section of the Panhandle district, is proving successful to date, as 1160 feet of hole has been drilled since the test was spudded November 24. Although rotary equipment has been used previously by wildcatters in the Panhandle district, cable tools have been shown preference in recent years, and the results obtained by Silk and others is being watched with interest. The Silk test is reported to have set a string of 15½ inch casing at 48 feet and was drilling in a salt formation late last week.

The heav gas production coming from lime formation at 2515-30 feet in the wildcat test of the Humphreys (Pure) Oil Company on the Sandford ranch, section 11, block 3, A. B. & M. survey, Carson County, has been partially mudded off, and most of the junk has been recovered from the bottom of the hole, except one string of tools. This well increased its flow of gas last August to approximately 100,000,000 cubic feet, after drilling past several shallower gas producing formations, and lately the gas flow was reduced to about 30,000,000 cubic feet daily by mudding off a section of the pay formation.

Arkansas Wildcats

COMPLETION

Ouachita County—

Gulf Ref. Co. Dawson C-1, 10-15-18 * 3017

DRILLING REPORT

CALHOUN COUNTY—The Checkerboard Synd.'s Abbott 1, 20-14-14, sd 2524 ft. Harris & Bickley's Freeman-Smith 1, 26-16-13, sd 1152 ft.

CLARK COUNTY—American Drilling Co.'s Wilson 1, 15-8-22, sd 440 ft. Arkansas Oil Co.'s Barringer 1, 26-10-20, sd 3120 ft. Dudley Trust's Grayson 1, 35-9-18, to resume dr 688 ft. Kansas Pet. Co.'s Fee 1, 31-9-21, dk. Littlejohn et al's Fee 1, 22-8-18, testing 980 ft.

CLEVELAND COUNTY—Clark & Melat's Wilson 1, 12-8-12, dk. Rex O. & G. Co.'s Ward 1, 18-11-11, sd 610 ft. Southern Arkansas Oil Co.'s Moore 1, 27-9-10, sd 530 ft.

COLUMBIA COUNTY—Brown et al's Robinson 1, 23-18-23, testing 2844 ft. De Soto & Hickman's Fullenwilder 1, 3-16-21, sd 1070 ft. Dowdy et al's Fullenwilder 1, 12-17-22, sd to test at 2166 ft. Hosey et al's Haire 1, 30-19-18, sd 2156 ft. Miller et al's Watts J, 20-16-18, sd 1990 ft.

DALLAS COUNTY—Conway et al's Riggs-Matlock 1, 33-8-15, dr 1785 ft.

DREW COUNTY—Graves et al's Karnes 4, 10-13-6, fsh 1748 ft. Rhodes et al's Martin 1, 27-17-8, skidding over.

GRANT COUNTY—Grant County O. & G. Co.'s Cargile 1, 26-5-12, sd 1740 ft.

HEMPSTEAD COUNTY—Hope Columbus Oil Co.'s King 2, 24-11-25, sd 2107 ft. Martin et al's Adams 1, 36-12-27, fsh 2165 ft Meyer et al's Nicholls 1, 17-11-25, sd 1765 ft. Orr et al's Yates 1, 19-12-23, sd 1610 ft.

LA FAYETTE COUNTY—Durham et al's Barton 1, 5-16-23, lcn. Ken-Saw Pet. Co.'s Red River Valley 1, 34-19-24, sd 2823 ft. La Fayette O. & G. Co.'s Creek 1, 10-13-24, dk. Lewisville Synd.'s Osborne 1, 16-15-24, sd 1650 ft. Wilcox et al's Renick 1, 25-16-25, sd 2807 ft.

LITTLE RIVER COUNTY—Gaines et al's Thomas 1, 15-13-29, dr 1900 ft. Johnson et al's Hawkins 1, 10-11-31, dr 1000 ft. Red River Valley Oil Co.'s Taylor 1, 29-13-29, sd 2790 ft.

MILLER COUNTY—Central Coast Oil Co.'s

A

Guaranteed

Product

Steelex balls and seats and **Bronzex** balls and seats are ground to fit—guaranteed tight.

Each ball and seat is ground together individually and they are kept in sets through the different operations in manufacture.

You can always depend on **Steelex** (In the red box) and **Bronzex** (in the yellow box). They are always absolutely uniform in quality and accurately machined.

You must appreciate how much this means toward reducing your operating costs.

If you forget the name Remember the Package

The Charles N. Hough Manufacturing Co.

"Where the Reliable Oil Well Supplies Come From"

Franklin, Penna.

PUMPING EQUIPMENT

Mann 1, 23-15-16, sd 3357 ft. Cochran & Ray's Adams 1, 4-14-27, sd 2850 ft. Kingsley et al's Thompson 1, 33-14-28, sd 500 ft. Munn O. & G. Co.'s Fee 1, 27-14-27, dk; Gillespie 1, 22-14-26, dk.

NEVADA COUNTY—Arkrado Oil Co.'s McCain 1, 36-10-23, rig. Anderson & Edwards' Eaves 1, 11-12-23, sd 180 ft. Carter et al's Bailey 1, 31-13-21, sd 400 ft. Miller-Burnham-Hawley Synd.'s Perry 1, 12-15-22, sd 460 ft. Prescott Oil Co.'s Henry 1, 10-12-20, sd 2212 ft. Steele & Sandlin's Martin 1, 13-14-22, sd 1600 ft. Transcontinental Oil Co.'s Blakeley 1, 14-13-20, to test at 1464 ft. Wooten et al's Moore-Martin 1, 9-13-20, sd 1225 ft.

OUACHITA COUNTY—Bray & Hawthorne's Halford 1, 20-14-16, sd 2000 ft. Eck & Boger's Criner 1, 21-15-19, dk. Foster et al's Harvey 1, 32-19-11, dk. Hopkins et al's Allen-Curry 1, 33-14-19, dr 2060 ft. Leeper et al's Wesson 1, 23-15-19, sd 2205 ft. Peltier et al's Eagle 1, 25-13-16, sd 2000 ft. Pure Oil Co.'s Moline 1, 21-11-17, fsh 2415 ft. Riley et al's Henry 1, 10-11-11, sd 2072 ft. Smackover Creek Oil Co.'s Moon 1, 32-15-17, set 6-inch 1861 ft.

UNION COUNTY—Bondurant et al's Turberville 1, 9-18-12, fsh 1150 ft. Federal Pet. Co.'s Union Saw Mill 2, 28-17-12, dr 3065 ft. Garrett et al's Robinson 1, 33-18-14, dry 2222 ft. Harrell Trust's Steele 1, 11-19-12, coring 2435 ft. Isola Oil Trust's Mathews 1, 34-16-14, sd 2257 ft. Ray et al's Long 1, 28-16-14, sd 1960 ft. Starke et al's Little 1, 21-19-12, dr 2000 ft. Strong Oil Co.'s Norman 1, 16-18-14, set 10-inch 250 ft.

Mississippi Wildcat Has Operators Up in the Air

Charleston, Miss., Dec. 10.—Visitors are present here from all over Louisiana, Arkansas and Oklahoma to witness the impending test to be made in the wildcat drilled by H. D. Easton and others of Shreveport, in Tallahatchie County, near here. The well has shown gas in considerable quantity, and the boiler is being moved back as a measure of safety.

The scouts and others gathered here are of the opinion that this well may serve to enroll Mississippi along with its neighbors, Louisiana and Arkansas, in the list of oil producing states.

Louisiana Wildcats

COMPLETIONS

Company, Well, Location—	Initial Production Bbls.	Depth
Bienville Parish—		
Standard Oil Co.'s Scott 1, 21-17-8	*	2558
Red River Parish—		
U. S. Drilling Corp.'s Fletcher 3, 10-12-10	*	2810
Sabine Parish—		
Gladys Belle Oil Co. Raines 1, 33-19-11	*	3890

DRILLING REPORT

BIENVILLE PARISH—Hodge-Hunt Lumber Co.'s Fee 3, 31-15-5, rig. Ohio Oil Co.'s Bodcau 1, 19-16-6, dr 1400 ft. Smith et al's Durrett 1, 34-18-5, dk. Smith et al's Harrell 1, 6-18-5, dk.

BOSSIER PARISH—Geo. O. Baird Co.'s Montgomery 1, 18-16-11, set 6-inch 800 ft. Oil Fields Gas Co.'s Bolinger 1, 32-23-11, set 8-inch 1210 ft. Perkins et al's Vance-McFarland 2, 18-19-13, plugging back to 2564 ft. Skannal et al's Fee 1, 22-17-12, dr 2480 ft slm. Sneed et al's Jones 1, 23-18-11, sd 400 ft. Tarver Pet. Co.'s Bolinger 1, 15-22-14, sd 2657 ft. Zink & Kurbert's McGuffin 1, 4-18-11, sd 260 ft.

CADDO PARISH—Brewer et al's Sharp 1, 15-18-16, dry 2410 ft, fsh for liner. Crude Oil Co.'s Alexander & Ledbetter 1, 27-16-14, set 10-inch 290 ft. Humble O. & R. Co.'s Youree-Randolph 1, 24-20-15, dr 2665 ft. Matson et al's Nickerson 1, 30-19-15, dk. Myra et al's Roberts 1, 34-23-15, sd 2810 ft.

CALDWELL PARISH—Culver et al's Culver 1, 21-14-4, rig.

CLAIBORNE PARISH—Triangle Drilling Co.'s Ranich 1, 17-22-5, sd 2650 ft.

DE SOTO PARISH—Caldwell et al's Welch 1, 7-14-10, dr 1735 ft. Ulrey et al's Frost-Johnson 1, 3-11-15, lcn.

LA SALLE PARISH—Burch et al's test, 21-11-3e, rig. Urania Pet. Co.'s Urania 2, 20-10-2e, sd 2120 ft; Urania 3, lcn.

LINCOLN PARISH—Bickner et al's Colvin 1, 35-20-2w, dk. Four Creeks Oil Co.'s Colvin 1, 35-20-3w, coring 930 ft. Middlefork Synd.'s Kay 1, 8-20-3w, to set cas and test 2356 ft.

OUACHITA PARISH—Haynes Oil Co.'s Dixie 2, 17-17-3e, sd 2260 ft.

RED RIVER PARISH—Coushatta Synd.'s Marsten 1, 24-12-10, sd 2250 ft.

SABINE PARISH—Brown et al's Bowman-Hicks 1, 7-7-12, sd 3125 ft; Bowman-Hicks 7, 16-7-12, sd 739 ft.

UNION PARISH—Arkansas Nat. Gas Co.'s Templeton 1, 19-23-1e, lcn. Clark & Woodward's Clark 1, 17-23-2e, set 10-inch 209 ft. Davidson & Palmer's Frost-Johnson 1, 18-23-1e, wosr 2217 ft; Green 1, 19-23-1e, dr 800 ft. Empire Gas & Fuel Co.'s Hamilton 1, 30-19-1e, dr 2655 ft. Evans et al's Cole 1, 16-22-2e, lcn. McCauldin Synd.'s Gulley 1, 36-21-1e, dk. Ohio Oil Co.'s Dubach Lumber Co. 1, 15-20-1w, dk tmbrs. Union Parish Drilling Synd.'s Fee 3, 17-23-1e, dry 2287 ft, to deepen.

WEBSTER PARISH—O'Brien et al's Doles 1, 26-21-9, dr 300 ft. Ohio Oil Co.'s Martin 1, 34-23-10, set 6-inch 2590 ft. Oil Fields Gas Co.'s Hope A-1, 13-21-10, dr 1980 ft; Hope B-1, B-2 and B-3, 13-21-10, lcns. Palmer & Blount's Anders 4, 6-18-10, fresh water 318 ft, sd 455 ft. Snyder et al's Hodges 2, 15-21-10, dk. Standard Oil Co.'s Woodward & Walker 1, 16-17-8, lcn. Triangle Drilling Co.'s Merritt 1, and 2, 14-21-10, lcns.

An Outstanding Feature of the
ROARK Standing Valve
The ROARK VALVE is regularly furnished with a California special type ball and seat which will operate at any speed without pounding the seat thus giving longer life than the ordinary ball and seat.
The seat used is of standard size and the seat frame is renewable and also very inexpensive.
Texas Oil Pump Co
Waco, Texas

Building a Refinery or Natural Gasoline Plant?

If you are contemplating building a refinery or a natural gasoline plant you should be a subscriber to

The REFINER and NATURAL GASOLINE MANUFACTURER

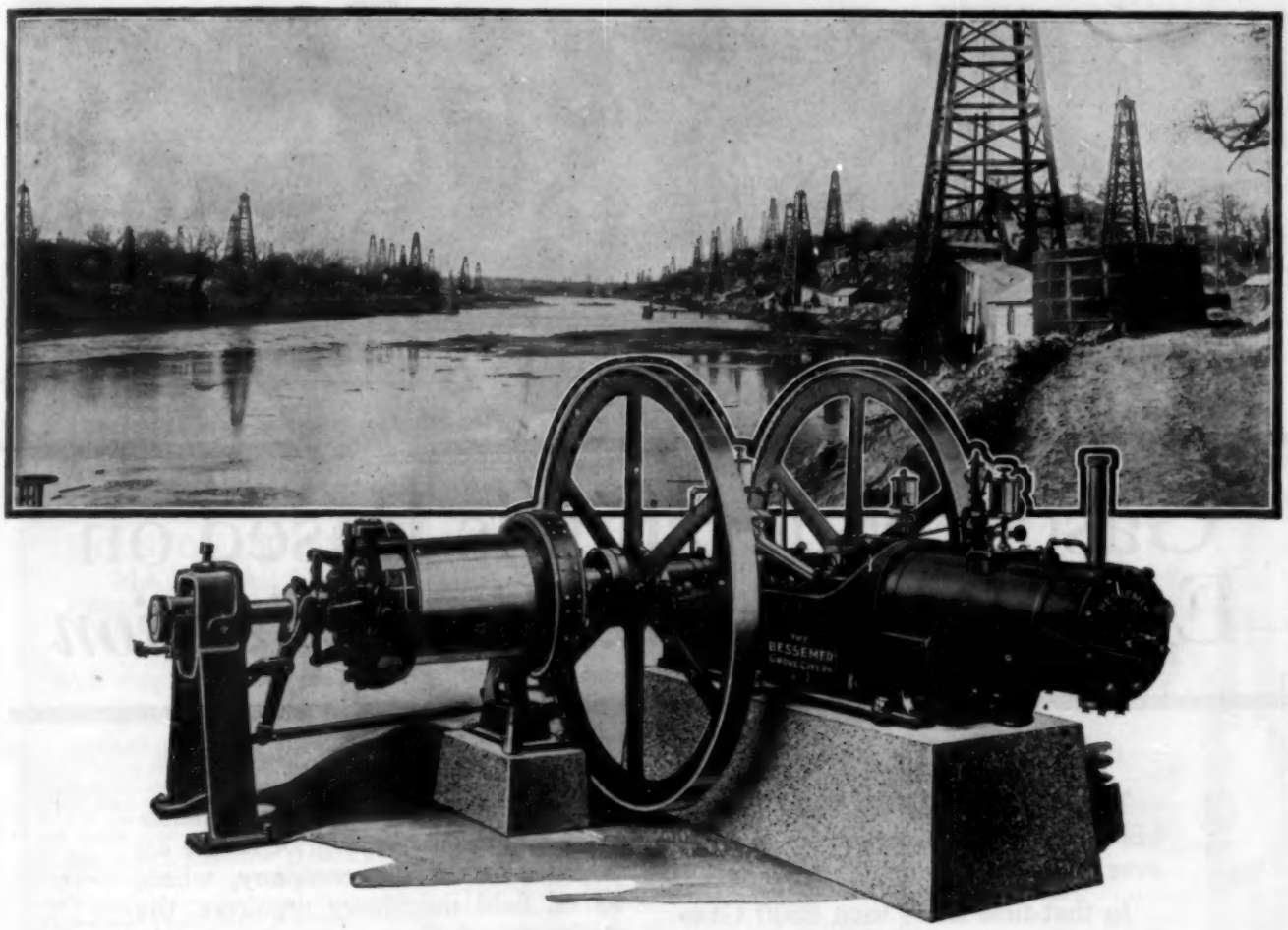
This journal specializes in that branch of the oil business that its name indicates. The subscription price is $1 per year.

Address

THE REFINER

and NATURAL GASOLINE MANUFACTURER

Box 1307 Houston, Texas



Not "*too many triggers*"

We asked the Superintendent of Production of a company which is one of the largest buyers of Bessemer Engines just why he chose the Bessemer.

His answer was brief and to the point.

"It hasn't too many triggers."

Then he went on to say that long experience had exclusively proved to them that Bessemers, because of their simplicity, meet oil-field conditions better than any other engine they had tried—"and we've tried them all."

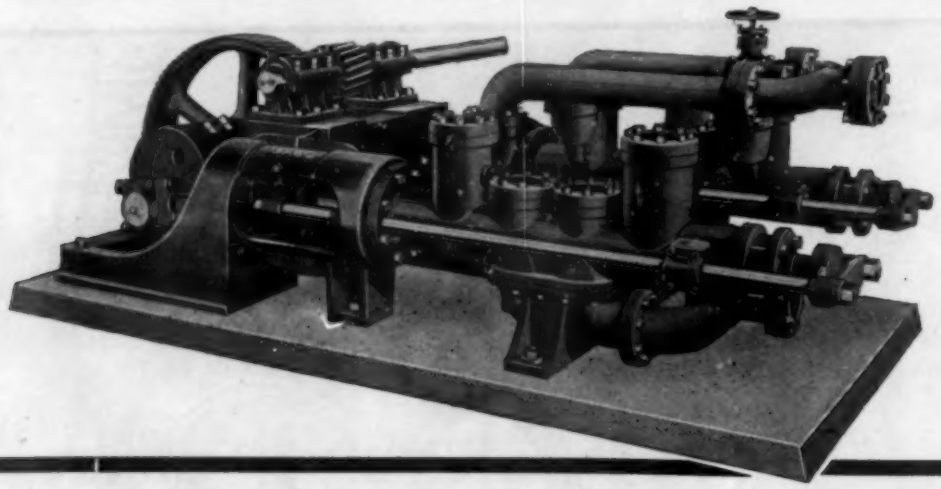
It doesn't take an expert to make a Bessemer operate—dependable performance *is built into them.* Buy performance—not "triggers"—buy Bessemers.

THE BESSEMER GAS ENGINE COMPANY
18 York Street Grove City, Pa.

BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

Say you saw it in The Oil Weekly



Gaso Leadership is Based on Experience *Plus Specialization*

The Gaso line of Oil Field Pumps has been on the market for a little over 6 years.

In that time more than 8500 Gaso Pumps have been bought and placed in operation.

The largest companies in the business have become consistent customers. Standard Oil, Sinclair Pipe Line, Prairie Pipe Line and scores of others of like caliber have specified them.

These have bought, not simply because the pumps were Gaso Pumps, but because in their opinion they offered extraordinary pump efficiency.

Gaso Pumps are the product not only of experience—an experience stretching back years prior to the establishment of the company, when, as oil field machinery repairers, the designers of Gaso pumps were observing oil field requirements at first hand—but also of SPECIALIZATION. It is but natural that a company devoting all its time, thought and effort to producing one family of pumps for the use of one industry, should be able to offer a product just a bit more advanced than that of a concern not so specializing.

8500 Gaso pumps produced in the last 6 years—8500 reasons why you also will find them efficient and economical.

GASO PUMP & BURNER MFG. CO. TULSA, OKLA.

GASO PUMPS
for oil field uses

Say you saw it in The Oil Weekly

OIL FIELD EQUIPMENT

PIPE, MACHINERY & OIL WELL SUPPLIES

Complete line of new and used pipe, complete Rotary Drilling Rigs, at attractive prices. Mill shipments promptly filled. See us before you buy.

TEXAS PIPE & SUPPLY CO.
1706-20 Maury Street Houston, Texas
Phones, Preston 1592-5411

C. H. Smith, Pres. and Treas.
Mrs. J. B. Moore, Vice-Pres.
A. L. Eastham, Sec.

Beaumont Well Works Co.
Oil, Gas and Water Well Supplies
Cor. Laurel and Magnolia
Beaumont Texas

HOUSTON OIL FIELD MATERIAL CO.
PIPE, BOILERS, ENGINES
All Kinds of Equipment, New and Used
West Bldg. Houston, Texas

"TEXAS SPECIAL" PORTABLE ROTARY RIGS

Gasoline engine, Power pump and complete Draw Works ALL ON WHEELS. Drills 2500 ft. for $1.50 per ft. Write for details and letters from satisfied owners.

OIL WELL SERVICE COMPANY
Cotton Exchange Houston, Texas

PIPE FOR SALE—Fifty miles or more of 4-inch line pipe standard, of 10.98 weight per foot with couplings. First class used F. O. B. location. Can furnish second-hand oil field equipment. In market for used oil field material.

THOS. F. HUDSON, M. D.
610 Binz Bldg. Houston, Texas

"First Exclusive Iron Dealers in Texas"

F. W. HEITMANN COMPANY

113 Main St., Houston, Texas

Gardner Steam Pumps
National Pipe, Boiler Tubes
Fittings, Valves, Packings
Beltings, Wire Rope
Drilling Cables, Bull Ropes

We carry a complete stock of the above commodities at all times and can ship immediately

PIPE LINE PROBLEMS

(Continued from Page 29)

was boxing the line and pouring in the melted tar. This was far too expensive. Then each joint of pipe was heated and dipped in a tank filled with melted tar. This also was expensive and required most careful handling of the pipe while laying.

Then was tried a method of dipping the pipe and wrapping around each joint long strips of cloth to serve as a binder for the coating. Finally, there has been adopted the simple method of pouring the melted tar upon the pipe which is suspended over an apron of heavy canvass carried by two men, which serves to spread it over and under the line in a thick coating with minimum waste of material or time. The pipe lines have struggled with and successfully solved one great problem which has threatened their lines—electrolysis. In some places it has been found that the pipe lines were carrying to a large extent the return current of the electric railroads in their vicinity. This, of course, resulted in serious and frequently recurring damage to the pipe.

Our problem was to prevent the electric current from getting on the pipe. A careful survey showed that on account of local reasons it would be much easier to prevent the current from leaving the pipe line and, of course, by so doing we would prevent it from getting on. The purpose was accomplished by covering this portion of the line with a thick coating of refinery tar and insulating each end of the portion so covered by using special insulating flange unions. Electrical tests then made showed that all current flow had been eliminated. This method has since been applied many times at different places and with uniform success. The pipe described in the foregoing remarks is, of course, screw joint, but the difficulty of always maintaining a tight joint at the collar, as well as the effort to reduce construction costs have developed a new method of laying line. This is the welded joint. The details of construction have been fully described elsewhere and need not be rehearsed here, but with the great enconomies in first cost and ease of repair, there is no doubt that this method will come into more extensive use in the future. It may be of interest to know that field repairs can be made on the pipe line with this apparatus with very satisfactory results and at low cost.

Pipe Line Personnel

And now we come to that feature of the pipe line operation without which the finest and most economical equipment is useless—the personnel of management and men. The pipe liner of old was a pioneer, beyond the fundamental legal requirements he had few worries as to the limitations surrounding him—no Federal or State Commission loomed on the horizon causing him to quake with fear—of this or that! If he had a line to lay he laid it, and was not too much concerned with the exact location of the right-of-way. All honor to him for he did his job and may he rest in peace. But the pipe liner of today has different problems to face, as well as different machinery to handle. Then he pounded the old 18x5 to make it run or "bucked" the tongs with skill and strength. Today he must be a trained mechanic to handle the high grade oil engine and in-

Has 4 Important Advantages

A DOUBLE SERVICE SWAB

Here is a swab that does everything an ordinary swab will do, but gives extra service besides.

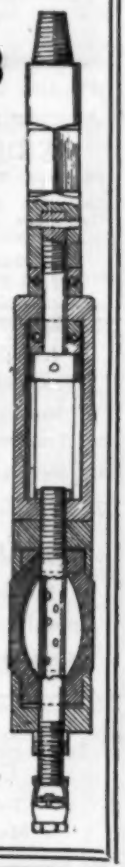
The rubbers last four times as long as on other swabs.

Line is saved because there is so little friction.

Time is saved because of wonderfully simple design.

Various fishing troubles caused by other swabs are eliminated.

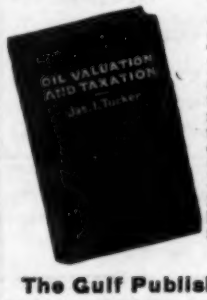
You really cannot appreciate the big improvement that the **Standlee Swivel Swab** represents until you have tried one and seen for yourself. Your supply house has it.



B. and C. MACHINE & FOUNDRY CO.
212 S. Norfolk Ave.,
Tulsa, Okla.

Sensation Belting
VOORHEES RUBBER MFG. CO.
TRADE MARK
JERSEY CITY, N.J.

Chapter 5.



Can you figure each year's "normal" and "surtax" accurately? Are "Capital" changes correctly placed in "Expense" accounts? How does a "fiduciary" handle tax matters? These, and many similar questions troubling the oil man appear in Chapter 5 of this Book.

332 pages, flexible leather, pocket size, $3.00 postpaid.

Send check to

The Gulf Publishing Company
P. O. Box 1307 Houston, Texas

RECOGNIZED PETROLEUM GEOLOGISTS

EUGENE COSTE & CO.
Petroleum Engineers and Geologists
DALLAS, TEXAS
Dallas County State Bank Building

SAMUEL J. CAUDILL
Geologist & Petroleum Engineer
Valuation—Depletion
For Financial or Income Tax Purposes
1016 Atlas Life Bldg. Tulsa, Okla.

ERICH F. KUEHNLE
Petroleum Technologist Rodgers Building
Geological Surveys, Supervision of Field Operations, Chemical Petroleum Analyses, Engineering and Statistical Services
Houston, Texas, U. S. A.
Phone Preston 5567. P. O. Box 331

ALEXANDER DEUSSEN
CONSULTING GEOLOGIST
Reports—Appraisals—Management
Texas and Louisiana Oil Properties
504 Stewart Bldg. Houston, Texas

DAVID DONOGHUE
Geologist and Engineer
Appraisals and Geological Reports
West Building, Houston, Texas

Oil Appraisals Management Tax Service
C. N. BLACK
Petroleum Engineer
Member A. S. C. E.
403 Stewart Bldg. Preston 3122

William H. Foster W. A. Reiter
FOSTER & REITER
CONSULTING GEOLOGISTS
19th Floor, Magnolia Bldg., Dallas
Atlas Life Bldg., Tulsa

Income Tax Service Oil Appraisals
The Jas. I. Tucker Co.
Consulting and Appraisal Engineers
Tradesmen's Bank Building
Oklahoma City, Okla.

GEO. C. MATSON
Petroleum Geologist and Engineer
Geological Surveys
Appraisals for Taxation or Financing
Phones Osage 2049-1833
408 Cosden Bldg. Tulsa, Okla.

tricate machinery of the plant or to operate the great pipe screwing machines and ditching machines which have largely supplanted the older methods.

In former days long lines of teams hauled the pipe from railroad to the right-of-way and the foreman drove over the work behind a good horse with speed and endurance. Now the motor truck and trailer and the passenger automobile have made possible much greater accomplishments with the same or even less man-power. It requires skill and good judgment to "flange up" a line without strain on the pipe, but it also takes great skill to weld together a complicated pipe grill. Similarly, more highly trained engineers and technical men are required to meet the complicated problems which arise with the advance of the industry.

The executive and his associates must be guided by multitudinous laws and regulations prescribing their conduct, and the accounting officers have no easy job in handling the complicated tax returns and other reports which must be compiled from time to time for State and Federal governments. The problem of the amount of depreciation to be charged off is one not easily decided and depends on a number of factors. Thus, there are, broadly speaking, two kinds of depreciation to be considered—physical, as affecting the useful life of the plant, and what may be called functional depreciation or obsolescense due to decrease or exhaustion of the source of supply of crude transported by the pipe line. These two factors in themselves may be and generally are totally different on one line as compared with another, and hence should be decided on the individual merits of each case.

Thus I have endeavored to indicate some of the problems confronting the pipe line as I see them. There are doubtless many others of which no mention is made. I have not attempted to analyze the problems of those pipe lines on the Pacific Coast, not considering myself competent to do so. It seems to me it would be very interesting to hear from these gentlemen some day.

Pipe Line Importance

I would like to leave with you the thought that the pipe lines of this country, from the days of the little Van Sickle pipe line to Pithole in 1865 down to the present great organizations, have played a most important part in developing the oil industry to its present huge proportions. The official figures published by the United States Geological Survey show that from 1859 to 1922 inclusive the total production of crude petroleum in the United States has been 6,459,582,000 barrels. I have not been able to ascertain how much of this production was hauled between wells and refinery or railroad shipping point by team prior to the development of the pipe line as a transportation agency, but it must have been a negligible quantity. Today the pipe lines of the country are gathering and transporting about two and one quarter million barrels each 24 hours and during the first 10 months of 1923 transported 598,810,000 barrels of crude from producing properties. Every barrel of this enormous quantity during some stage of its progress to market has required the use of pipe line facilities.

It is self-evident that the pipe line companies, depending ultimately on the public for their business, must be carefully and economically operated if they

(Continued on page 63)

F. N. WILLIAMS
PETROLEUM ENGINEER
Specializing in Design, Construction, Operation and Management of Refineries, Investigation and valuation. Reconstruction of refineries to meet modern conditions.
2213 Park St., Beaumont, Texas

EDWIN B. HOPKINS
CONSULTING GEOLOGIST
25 Broadway
NEW YORK

VINSON, ELKINS & WOOD
ATTORNEYS
Gulf Building, Houston, Texas
Special Attention to Oil Leases and Litigation

PATENTS
Patents Obtained and Trade Marks and Copyrights Registered
428-29-30 Bankers Mortgage Building
HARDWAY & CATHEY
Phone Preston 4790 Houston, Texas

Maurice Hirsch & Allen Hannay
ATTORNEYS AT LAW
601-2-3 Goggan Bldg
HOUSTON, TEXAS
Specializing in Oil Law and Land Law

PATENTS
Patents Obtained, Trade Marks, Patent Causes
JESSE R. STONE
Formerly Assistant Examiner United States Patent Office
Andrews, Streetman, Logue and Mobley
12th Floor Union N. Bk., Houston, Texas

Frank A. Herald John M. Herald
HERALD BROTHERS
Geologists
Petroleum Engineers
303 Cosden Building Tulsa, Okla.

ACREAGE AND PRODUCTION FOR SALE OR WANTED

SOUTHERN ENGINEERING SUPPLY CO., Inc.,
Blue Printing Photostats
Engineering and Drafting Supplies
We specialize in map printing
90½ Main St., Houston, Texas
Phone Preston 6780

TEXAS OIL MAPS
County and District
Catalog on Application
HEYDRICK MAPPING COMPANY,
Wichita Falls, Texas

Announcing New Sectionized Texas County Maps, Scale 1 inch-1 mile
White Prints Cloth $5.00, paper $3.00
Humble, Gulf, Texas, Mid-Kansas, Prairie, Pure, Sinclair and Cosden Companies use our maps.
Every County in Texas
Orders in mail one hour after receipt of wire
TEXAS PETROLEUM BUREAU,
P. O. Drawer 586 Ft. Worth, Texas

The FT. WORTH LABORATORIES

Field Gas Testing. Analysis of oil field brines, gas minerals and oil.
Sell Thermometers, Hydrometers and Laboratory Glassware
F. B. Porter, B. S., Ch. E., Pres.
R. H. Fash, B. S., Vice President.
828½ Monroe St., Ft. Worth, Texas

F. W. Freeborn Engineering Corporation
Engineers, Appraisers, Constructors, Managers
For
Oil and Industrial Properties
Valuations for Income Tax, Reorganization, Refinancing and Mergers
General Offices: Tulsa, Oklahoma
Branch Offices: New York, Dallas, Boston

IMPORTS AND EXPORTS OF CRUDE PETROLEUM (Barrels)*

(From Bureau of Foreign and Domestic Commerce)

	—September, 1923—		—October, 1923—			
Imports	Total	Daily Average	Total	Daily Average	Jan.-Oct., 1923	Jan.-Oct., 1922
From Mexico	6,022,000	200,733	6,681,000	215,516	65,062,000	111,965,000
From Other Countries	.....	.....	217,000	7,000	2,429,000	748,000
Total	6,022,000	200,733	6,898,000	222,516	67,491,000	112,713,000
Exports Domestic crude oil						
To Canada	795,000	26,500	830,000	26,774	7,175,000	6,591,000
To Other Countries	766,000	25,533	462,000	14,903	6,469,000	1,440,000
Foreign Crude Oil	31,000	1,033	† 32,000	1,033	257,000	131,000
Total	1,592,000	53,066	1,324,000	42,710	13,901,000	8,162,000
Excess of Imports over Exports	4,430,000	147,667	5,574,000	179,806	53,590,000	104,551,000

* The Bureau of Foreign and Domestic Commerce has adopted a new classification which differentiates crude petroleum and topped oil; formerly, data for topped oil were included with those for crude oil and difficulty is still encountered in completely separating the two.
†October data not available, September daily average used.

CLASSIFICATION OF IMPORTS OF MEXICAN CRUDE PETROLEUM

(Reported to Geological Survey)

	Percentage of Mexican imports			
Crude Oil:	Sept., 1923	Oct., 1923	Jan.-Oct., 1923	Jan.-Oct., 1922
Lighter than 16°	26	21	30	71
16° and heavier	74	79	70	29

INDICATED CONSUMPTION (DELIVERIES TO CONSUMERS) OF DOMESTIC AND IMPORTED PETROLEUM (Barrels)

(Based on formula—indicated deliveries equal production plus imports minus exports plus stocks at beginning of month minus stocks at end of month)

	September, 1923		October, 1923			
	Total	Daily average	Total	Daily average	Jan.-Oct., 1923	Jan.-Oct., 1922
Domestic Petroleum, by Fields						
of Origin—Appalachian	2,383,000	79,434	2,317,000	74,742	23,055,000	22,485,000
Lima-Indiana	190,000	6,333	178,000	5,742	1,817,000	2,242,000
Ill. and S. W. Ind.	541,000	18,033	593,000	19,129	6,648,000	6,342,000
Mid-Continent	22,445,000	748,167	26,755,000	863,064	239,626,000	207,780,000
Gulf Coast	2,325,000	77,500	2,164,000	69,806	27,124,000	23,370,000
Rocky Mountain	2,620,000	87,333	2,575,000	83,065	28,190,000	22,812,000
California	25,373,000	845,767	23,285,000	751,129	205,955,000	98,540,000
Deliveries and Exports	55,877,000	1,862,567	57,867,000	1,866,677	532,415,000	381,571,000
Exports of Domestic C'de Oil	1,561,000	52,034	1,292,000	41,677	13,644,000	8,031,000
Deliveries	54,316,000	1,810,533	56,575,000	1,825,000	518,771,000	373,540,000
Imported Petroleum	6,130,000	204,333	6,528,000	210,581	67,962,000	107,674,000
Deliveries of Domestic and Imported Petroleum	60,446,000	2,014,866	63,103,000	2,035,581	586,733,000	481,214,000

NUMBER OF PRODUCING WELLS COMPLETED*

Aug., 1923	Sept. 1923	October, 1923	Jan.-Oct., 1923	Jan.-Oct., 1922
1,465	1,278	1,143	14,391	14,691

*For States east of California, from Oil & Gas Journal, for California, from the American Petroleum Institute.

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES (From the Panama Canal Record)

(Compiled from declaration by masters of vessels reported in tons of 2,240 pounds)

	Sep. 1923	Oct., 1923	Jan.-Oct., 1923*
Crude Oil: long tons	†840,360	702,010	5,824,695
Barrels: (approximate)	6,135,000	5,125,000	42,521,000
Refined products: long tons	27,000	29,514	404,910

*In some of the manifests for the first few months of 1923 crude oil is not declared as such.
†Revised.

10-Year Oil and Gas Leases

With low rentals in tracts from 640 to 20,000 acres each along Sheffield Terrace on Marathon Fold, Crockett, Reagan and Terrell Counties, Texas, Fifteen of the major and most active companies in the state have already acquired protection acreage on the Marathon Fold. I am selling these leases rapidly and at reasonable prices. Write or wire for maps and full details by return mail.

Reference, Texas National Bank, Fort Worth.

C. W. WEBSTER
No. 1 Worth Building Fort Worth, Texas

PIPE LINE PROBLEMS

(Continued from Page 62)

are to endure. They must provide a service at the lowest rate which the inherent limitations of their operations will permit and which will at the same time properly protect the interests of their thousands of stockholders. But it is also self-evident that in the long run the oil industry as a whole can not function successfully without the pipe line as a means of bulk transportation.

Quoting from a recent publication on the oil industry "The elimination of waste and the reduction of cost in connection with transportation, of course, resulted in great material benefits to the consumer of petroleum products. It is indeed quite clear that without this Napoleonic organization of the pipe line service the boon of petroleum could not have been adequately utilized by humanity at large.

Gulf Refining Company

OKLAHOMA
TEXAS
LOUISIANA

Refiners of PETROLEUM

GASOLINE
REFINED OIL
NAPHTHA
GAS OILS
PARAFFINE WAX
ASPHALT
FUEL OIL
LUBRICATING OILS
CYLINDER
ENGINE
CORDAGE

Red and Pale Paraffine Oils

General Sales Offices: PITTSBURGH, PA.

District Sales Offices:
NEW YORK, HOUSTON, ATLANTA, BOSTON, NEW ORLEANS
PHILADELPHIA

Ocean Terminals

Beverly, Mass.
Gibson's Point, Pa.
Port Tampa, Fla.
Port Arthur, Texas

Bayonne, N. J.
Savannah, Ga.
Gretna, La.
Magazine Point (Mobile), Ala.

Providence, R. I.
Jacksonville, Fla.
Galveston, Texas

Steel Storage Keeps Pace With Production

Crude oil stocks increase more than 5,000,000 barrels in Corsicana-Powell section

Corsicana, Texas, Dec. 3.—Stocks of crude oil in steel storage in the Mexia district and Corsicana-Powell field section of East Central Texas amounted to 27,672,805 barrels on November 21, and were held by 14 different concerns, the Humble Pipe Line Company being credited with about one-fourth of the total stocks in the district. This paticular section of Texas has recently developed into one of the major storing centers in the country as a result of the great number of steel tanks needed to handle the flush production from the Mexia field and lately the unusual flush production from the Corsicana-Powell field. The best steel storage facilities are used because of the quality of the oil.

Although the flush production from the Corsicana-Powell field has registered a tremendous decline since the middle of November and is now below the potential pipe line facilities in the field. Storage amounting to 3,000,000 barrels is under construction in the district and will probably be ready for use by the end of the present year. This construction work is being done by eight different companies, and was started prior to the Corsicana-Powell field's sudden drop in daily output. These companies are planning on filling as much of this storage as possible, and hold the oil until more favorable prices are obtainable, as the price is now $1 per barrel for all grades in both the Mexia and Corsicana-Powell fields.

In addition to being the largest producer in the Corsicana-Powell field, Humble holds the lead on storage facilities completed and under construction. Exclusive of the large tank farms in the Mexia district Humble is reported to have completed 35 80,000-barrel tanks and about 25 55,000-barrel tanks in the Corsicana-Powell field, and has under construction 23 55,000-barrel tanks and three 80,000-barrel tanks, while 10 proposed tanks were cancelled off the building program late in November. The Cobden Fuel Company, which has already filled 21 55,000-barrel tanks through purchase of oil from operators in the field, has seven more tanks of the same size well under way. The Mutual Oil Company completed its first 55,000-barrel tank last week on its tank farm just below the town of Navarro, and has four more under construction. Garland H. Kent, an independent operator in the field, reports two 55,000-barrel tanks nearing completion, and the same number underway. Two 55,000-barrel tanks are being erected by Skelly Oil Company, and one is completed, except for several days more work on the roof, while the other has several rings up. Gulf's four new 55,000-barrel tanks are expected to be ready for use before the end of December, while Magnolia is making good progress on its renewed storage program. which was started shortly before the field began slipping in daily output. The Tidal-Buttram interests have seven 80's and two 55's filled, and are constructing five more 80's and seven 55's.

Since the Corsicana-Powell field reached its peak in daily output, storage has not been drawn on as rapidly, but it is expected that pipe line shipments from the field will be materially reduced shortly in order to utilize the surplus storage facilities that now exists at tank farms in and around the field. It is generally believed that if another field is not uncovered in this section of the state next year all the major pipe line companies having large storage facilities in the Corsicana-Powell district will pipe their surplus crude from Oklahoma and North and Central West Texas fields and fill their tankage, as their trunk lines from the Mid-Continent district to the Coast are connected to this district.

Crude oil held in steel storage in the Mexia and Corsicana-Powell fields in East Central Texas as of November 21 follows:

Company—	Corsicana-Powell crude	Mexia crude	Total crude in storage
Humble Pipe Line Company	4,208,600	*3,378,600	7,587,200
Sinclair Pipe Line Company	343,700	4,854,350	5,198,050
Humphreys (Pure) Pipe Line Company	.....	4,016,300	4,016,300
Magnolia Petroleum Company	1,616,200	†1,109,800	2,726,000
Prairie Pipe Line Company	459,200	2,232,275	2,691,475
Gulf Pipe Line Company	602,800	684,500	1,287,300
Atlantic Oil Producing Company	629,700	432,500	1,062,200
Cobden Fuel Company	940,500	.....	940,500
Simms Oil Company	.....	695,650	695,650
Tidal-Buttram Interests	565,300	.....	565,300
Humphreys Oil Company	336,980	.....	336,980
Texas Pipe Line Company	.....	306,650	306,650
U. S. Texas Oil Corporation	193,600	.....	193,600
Galena Signal Oil Company	.....	65,600	65,600
Totals on November 21	9,896,580	17,776,225	27,672,805
Totals on October 11	5,932,255	17,369,075	23,301,330

*Includes 707,800 barrels of Ranger crude.
†Includes 474,600 barrels of Healdton, Okla., crude and 359,400 barrels of Ranger crude.

Standard Gas Engine Co. Has Bulletins for Trade

Two bulletins recently issued by the Standard Gas Engine Company are of sufficient importance to entitle them to the consideration of all branches of the oil industry where gas engines are used.

Bulletin No. 21 describes heavy oil engines from seven and a half to 300 horsepower. A general description is given of the heavy oil engine of the semi-Diesel or surface ignition type, operating on the well known two cycle principle. Then follows a section giving general details of construction of all parts of the engine, showing each part as it fits another part and describing in minute detail the kind of metal used, method of building the engine, etc. Many cuts are used to give accurate pictures of the engine, and considerable space is given over to condensed data on stationary engines in general.

Bulletin No. 20 describes marine and stationary engines, marine and stationary hoists and electric units from five to 275 horsepower. Construction details, cuts, charts and statistical information are much the same as in bulletin 21. Specifications are given in each bulletin showing the amount of space used by each engine of each different type.

Copies of both bulletins may be secured by writing the Standard Gas Engine Company, Dennison and King streets, Oakland, California.

Fullerton Wildcat Will Be Drilled to 5000 Feet

Los Angeles, Calif., Dec. 10.—The Russell Petroleum Company has purchased a half interest in the holdings of the Dolke-Thomas Oil Syndicate, which includes a 4000 foot hole in addition to the lease, and the test will be carried to 5000 feet at once.

This well has been shut down for some time, and it has attracted considerable interest, since the location was made some two years ago by C. F. Thomas, at one time assistant geologist for the Union Oil Company, and who has been rather successful in his work in California.

The well is located about three-quarters of a mile northeast of the business district at Fullerton, in Orange County, and if a well results, the district will be very much in the limelight.

Crane Company Bulletins Ready for Distribution

Oil and gas pipe line material for all pressures manufactured by the Crane Company, 836 S. Michigan Ave., Chicago, Illinois, is described in a series of bulletins just off the press.

The bulletins cover cast steel valves and fittings, from 150 to 3000 pounds working pressure. A description is given of the metals used in the valves of various classes, and specifications and cuts are also included. Upon application to the company, the bulletins will be mailed free to any one.

HEADQUARTERS CONSOLIDATE

Denver, Colo., Dec. 10.—Mutual Oil directors have decided to consolidate the company's offices, making the general headquarters in Denver. The change will bring together the producing, refining and marketing divisions at a point nearer the center of operations of Mutual Oil.

Gulf Refining Company

OKLAHOMA
TEXAS
LOUISIANA

Refiners of PETROLEUM

GASOLINE
REFINED OIL
NAPHTHA
GAS OILS
PARAFFINE WAX
ASPHALT
FUEL OIL
LUBRICATING OILS
CYLINDER
ENGINE
CORDAGE

Red and Pale Paraffine Oils

General Sales Offices: PITTSBURGH, PA.

District Sales Offices:
NEW YORK, HOUSTON, ATLANTA, BOSTON, NEW ORLEANS
PHILADELPHIA

Ocean Terminals

Beverly, Mass.
Gibson's Point, Pa.
Port Tampa, Fla.
Port Arthur, Texas

Bayonne, N. J.
Savannah, Ga.
Gretna, La.
Magazine Point (Mobile), Ala.

Providence, R. I.
Jacksonville, Fla.
Galveston, Texas

Steel Storage Keeps Pace With Production

Crude oil stocks increase more than 5,000,000 barrels in Corsicana-Powell section

Corsicana, Texas, Dec. 3.—Stocks of crude oil in steel storage in the Mexia district and Corsicana-Powell field section of East Central Texas amounted to 27,672,805 barrels on November 21, and were held by 14 different concerns, the Humble Pipe Line Company being credited with about one-fourth of the total stocks in the district. This paticular section of Texas has recently developed into one of the major storing centers in the country as a result of the great number of steel tanks needed to handle the flush production from the Mexia field and lately the unusual flush production from the Corsicana-Powell field. The best steel storage facilities are used because of the quality of the oil.

Although the flush production from the Corsicana-Powell field has registered a tremendous decline since the middle of November and is now below the potential pipe line facilities in the field. Storage amounting to 3,000,000 barrels is under construction in the district and will probably be ready for use by the end of the present year. This construction work is being done by eight different companies, and was started prior to the Corsicana-Powell field's sudden drop in daily output. These companies are planning on filling as much of this storage as possible, and hold the oil until more favorable prices are obtainable, as the price is now $1 per barrel for all grades in both the Mexia and Corsicana-Powell fields.

In addition to being the largest producer in the Corsicana-Powell field, Humble holds the lead on storage facilities completed and under construction. Exclusive of the large tank farms in the Mexia district Humble is reported to have completed 35 80,000-barrel tanks and about 25 55,000-barrel tanks in the Corsicana-Powell field, and has under construction 23 55,000-barrel tanks and three 80,000-barrel tanks, while 10 proposed tanks were cancelled off the building program late in November. The Cobden Fuel Company, which has already filled 21 55,000-barrel tanks through purchase of oil from operators in the field, has seven more tanks of the same size well under way. The Mutual Oil Company completed its first 55,000-barrel tank last week on its tank farm just below the town of Navarro, and has four more under construction. Garland H. Kent, an independent operator in the field, reports two 55,000-barrel tanks nearing completion, and the same number underway. Two 55,000-barrel tanks are being erected by Skelly Oil Company, and one is completed, except for several days more work on the roof, while the other has several rings up. Gulf's four new 55,000-barrel tanks are expected to be ready for use before the end of December, while Magnolia is making good progress on its renewed storage program. which was started shortly before the field began slipping in daily output. The Tidal-Buttram interests have seven 80's and two 55's filled, and are constructing five more 80's and seven 55's.

Since the Corsicana-Powell field reached its peak in daily output, storage has not been drawn on as rapidly, but it is expected that pipe line shipments from the field will be materially reduced shortly in order to utilize the surplus storage facilities that now exists at tank farms in and around the field. It is generally believed that if another field is not uncovered in this section of the state next year all the major pipe line companies having large storage facilities in the Corsicana-Powell district will pipe their surplus crude from Oklahoma and North and Central West Texas fields and fill their tankage, as their trunk lines from the Mid-Continent district to the Coast are connected to this district.

Crude oil held in steel storage in the Mexia and Corsicana-Powell fields in East Central Texas as of November 21 follows:

Company—	Corsicana-Powell crude	Mexia crude	Total crude in storage
Humble Pipe Line Company	4,208,600	*3,378,600	7,587,200
Sinclair Pipe Line Company	343,700	4,854,350	5,198,050
Humphreys (Pure) Pipe Line Company	.....	4,016,300	4,016,300
Magnolia Petroleum Company	1,616,200	†1,109,800	2,726,000
Prairie Pipe Line Company	459,200	2,232,275	2,691,475
Gulf Pipe Line Company	602,800	684,500	1,287,300
Atlantic Oil Producing Company	629,700	432,500	1,062,200
Cobden Fuel Company	940,500	.....	940,500
Simms Oil Company	.....	695,650	695,650
Tidal-Buttram Interests	565,300	.....	565,300
Humphreys Oil Company	336,980	.....	336,980
Texas Pipe Line Company	.....	306,650	306,650
U. S. Texas Oil Corporation	193,600	.....	193,600
Galena Signal Oil Company	.....	65,600	65,600
Totals on November 21	9,896,580	17,776,225	27,672,805
Totals on October 11	5,932,255	17,369,075	23,301,330

*Includes 707,800 barrels of Ranger crude.
†Includes 474,600 barrels of Healdton, Okla., crude and 359,400 barrels of Ranger crude.

Standard Gas Engine Co. Has Bulletins for Trade

Two bulletins recently issued by the Standard Gas Engine Company are of sufficient importance to entitle them to the consideration of all branches of the oil industry where gas engines are used.

Bulletin No. 21 describes heavy oil engines from seven and a half to 300 horsepower. A general description is given of the heavy oil engine of the semi-Diesel or surface ignition type, operating on the well known two cycle principle. Then follows a section giving general details of construction of all parts of the engine, showing each part as it fits another part and describing in minute detail the kind of metal used, method of building the engine, etc. Many cuts are used to give accurate pictures of the engine, and considerable space is given over to condensed data on stationary engines in general.

Bulletin No. 20 describes marine and stationary engines, marine and stationary hoists and electric units from five to 275 horsepower. Construction details, cuts, charts and statistical information are much the same as in bulletin 21. Specifications are given in each bulletin showing the amount of space used by each engine of each different type.

Copies of both bulletins may be secured by writing the Standard Gas Engine Company, Dennison and King streets, Oakland, California.

Fullerton Wildcat Will Be Drilled to 5000 Feet

Los Angeles, Calif., Dec. 10.—The Russell Petroleum Company has purchased a half interest in the holdings of the Dolke-Thomas Oil Syndicate, which includes a 4000 foot hole in addition to the lease, and the test will be carried to 5000 feet at once.

This well has been shut down for some time, and it has attracted considerable interest, since the location was made some two years ago by C. F. Thomas, at one time assistant geologist for the Union Oil Company, and who has been rather successful in his work in California.

The well is located about three-quarters of a mile northeast of the business district at Fullerton, in Orange County, and if a well results, the district will be very much in the limelight.

Crane Company Bulletins Ready for Distribution

Oil and gas pipe line material for all pressures manufactured by the Crane Company, 836 S. Michigan Ave., Chicago, Illinois, is described in a series of bulletins just off the press.

The bulletins cover cast steel valves and fittings, from 150 to 3000 pounds working pressure. A description is given of the metals used in the valves of various classes, and specifications and cuts are also included. Upon application to the company, the bulletins will be mailed free to any one.

HEADQUARTERS CONSOLIDATE

Denver, Colo., Dec. 10.—Mutual Oil directors have decided to consolidate the company's offices, making the general headquarters in Denver. The change will bring together the producing, refining and marketing divisions at a point nearer the center of operations of Mutual Oil.

"OILWELL" TongS

The PERFECT JAW TWO HALF CIRCLES

For Jerk Line or Rotary Work

Simplest, Sturdiest, Most Positive Tongs Made

ADJUSTABLE-BALANCED

¶ The Bit Liners are cam shaped, moving forward and in as the Handle moves forward—this forces the three tool-steel Bits to grip slowly, smoothly, and positively, without crushing effect.

¶ By using one set of Jaws, and one Handle, a number of different sizes of pipe, casing and tool joints can be operated by merely bushing the Jaws with the proper Plain and Bit Liners.

¶ "Oilwell" Tongs are accident proof—No hooks, catches, or automatic locks are used. Once the Locking Pin is inserted, the Jaws cannot be opened until the pin is removed.

¶ "Oilwell" Tongs are self-balancing—the Suspension Chain is so mounted that the Tongs balance perfectly whether Jaws are open or closed. Tongs are made of electric steel throughout.

Write for the "Oilwell" Tongs Folder or get a copy at any of our 100 Branches.

¶ **"Oilwell" Rotary Outfits being made up of component parts, each of which is the leader in its line, are vastly superior to any other outfit.**

Oil Well Supply Co.

PITTSBURGH, U. S. A.

New York San Francisco
Los Angeles Tampico London

OILWELL SUPPLY CO

World's Largest Manufacturers of Oil Field Equipment

NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS

Brown Sucker Rod Socket Is Latest Fishing Tool

Among the many new fishing tools being manufactured by the Brown Welding and Machine Company is the Brown Sucker Rod Socket. This socket is now being used successfully in Mid-Continent fields after having been given a thorough test of several months in the Gulf Coast districts.

Three parts make up the socket:

A. A sub with seven-eighths inch, nine thread, or one inch 10 thread pin—one and seven-eighths inch shoulder, with a five-eighths inch oil course.

B. A combination socket with long nickel steel slips, two piece case hardened, that catches five-eighths, eleven-sixteenths and three-quarter rods.

C. A bull dog shoulder (that can't turn loose) consisting of a tube with slanted bottom beveled so that the rod can't keep from entering, and with the front cut out and hardened tool steel jaws welded at the bottom of the opening. There is a long slip with a hollow guide at the top kept in place by the part circle ring.

How it Works

For a rod parted at the joint, or a pin broken above the box: When the shoulder enters the tool it raises the slip until the neck of the rod passes above the tool steel jaw and then the lower part of the slip falls behind the sucker rod box, forcing the edge of the body out over the teeth of the jaw. The shoulder of the rod is too big to pass back through the hole. The thickness of the lower end of the slip regulates the size that the tool catches.

Rods broken below the box weld pass up through the shoulder and are caught by the combination socket.

Further information regarding the sucker rod socket may be secured by communicating with Brown Welding and Machine Company, of Breckenridge, Texas, or 310 East Third Street, Tulsa, Oklahoma.

United Iron Works Has Catalog Ready to Mail

A complete line of standard and extra heavy pipe fittings, refinery equipment, oil well supplies, steel tankage, mechanical refrigeration equipment, centrifugal pumps, and deep well pumps is featured in a new catalog put out by the United Iron Works, Inc.

The book is compact in size, takes up little space on a desk, and contains all the information necessary to describe each piece of equipment listed. Good half-tone cuts are used throughout the catalog and the printing is of good quality.

Besides the regular data, specifications, descriptions, etc., that go with each line of equipment, the catalog contains several sheets of other useful information. Copies will be furnished on request by the United Iron Works, Inc., Kansas City, Missouri.

Truscon Booklet Gives Data on Field Buildings

In a new booklet called "Truscon Standard Buildings," steel buildings of all descriptions are featured in great detail.

The following types of steel construction are shown and discussed: machine shops, foundry buildings, factory dining rooms, hospitals, garages, railroads, oil buildings, filling stations, garages and service stations, buildings with steel sash sidewalls and building combinations.

Under each type building, cuts are shown to illustrate the different designs and plans of such buildings. The cuts show both interior and exterior of all the buildings described.

Then there is a section of the book given over to a complete description of how Truscon Steel Buildings are made. Standard heights, standard lengths, and canopy requirements are included for each building.

A special section discusses lighting and ventilation of steel buildings, showing special features to insure both ample light and sufficient ventilation in buildings made by the Truscon company. Lean-tos are shown and suggestions are given as to how floor space can be enlarged by the use of a lean-to where a building would be impossible.

Wall panel units, doors, sashes, roof plates and combinations of units to make complete wall panels are mentioned.

The Truscon Steel Company, Youngstown, Ohio, will furnish copies of this booklet to anyone interested.

Ideal Back Pressure Valve Offered by Union Tool Co.

Designed to control the flow of cement while pumping it into the well, the Ideal Back Pressure Valve has just been put on the market by the Union Tool Company and is for sale by the concerns handling this company's products.

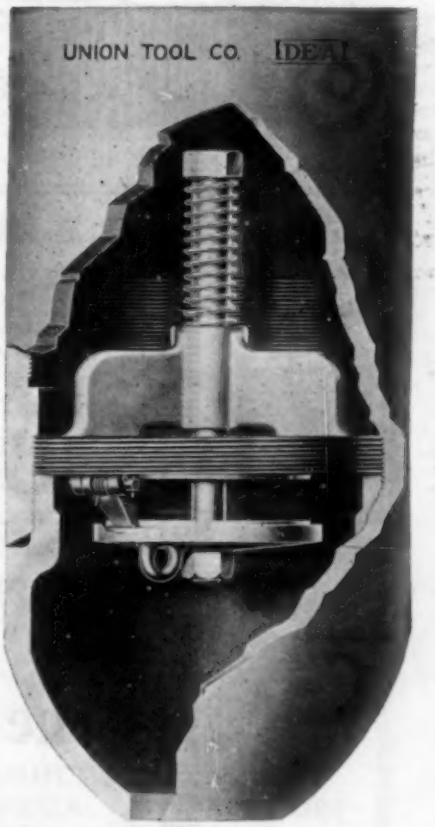
The new valve is furnished assembled with the Ideal casing shoe with floating plug or shoe guide, ready for attaching to the water string, or it can be burnished separately, as it is easily fitted to the casing shoe by threading the lower end of the shoe.

Details of construction and operation are given as follows:

The valve is held open by means of a dog to allow the water free passage while lowering the casing prior to cementing. When the cement is pumped into the hole the pressure causes a further opening of the valve and allows the dog, which is operated by a light spring, to swing out clear of the valve travel and allows the valve to close when the cement is all pumped into place and the casing landed, preventing the cement from re-entering the casing.

When the Ideal back pressure valve is used, the casing may be set at any desired place in the hole, insuring a sufficient body of cement under and around the pipe to make a successful water shutoff.

The possibilities of making errors in taking measurements, which is sometimes the case when attempting to position the ordinary cement plug or retainer during the cementing operation, is eliminated through the use of the Ideal back pressure valve, because it is attached to the casing before being lowered into well.



Union Tool Company's New Back Pressure Valve

DUNN TONGS

Type "CX"

Drillers for many years have known the old reliable Dunn Tong which can always be depended upon in the event of a hard pull.

It is not necessary to buy a tong for every size of pipe when you use Dunn Tongs; the bushings handle all sizes of casing, rotary tool joints, drill pipe and collars.

There is a size and type of Dunn Tong for every field requirement.

Carried in stock by

The National Supply Companies

Letters of a Coastal Bollweevil

mi deer cleopatry

cleo hunny i was intendin 2 cum down 2 sea yu this sundy & i wood a done it only i find out at the last minnit that i hav 2 go 2 st luis 2 the meetin on the petrolum institute whitch meets up their on tuesday & i am leevin hear sundy on the sunshine speshul trane whitch will git their monday & giv me plenty of time 2 find me a bordin house 2 stay at or mabe find me a plase 2 sleep down on the river docks like i done the last time I was up 2 st luis which was more than a yere ago. i gess bi this time that girl what i seen up their the last time has mabe moved an ennyway i hav forgot her name an phome no., so yu neednt 2 not be skairt that i am goin up their on akount of her, cleo. yu no ennyway that i am true 2 yu & do not munkey around with no other woman.

well i was not plannin on goin 2 this hear meetin of the amerikan petrolum instytute until today whitch is saterday nite & the reesen was i had forgot all about it bein the meetin till i was out 2 a foot ball game at the rise instytute feeld an i herd sum yung coledge fellers hollerin "ripyty toot, ripyty toot, we'er the boys from instytute, we dont smoke & we dont chew an we dont play with boys what do," an then i remembers that i had had sum letters from the petrolum instytute an also from a hotel in st luis an from the i&gn rr all of them urgin me 2 go. Well, cleo, the amerikan petrolum instytute aint the same as rice instytute escept the name sounds kinder like it. yu see it is the same only difrent. the rise institoot does not hav nuthin 2 do with rice but is jest a skool or a colledge, an the petrolum instutoot is a meetin of the leedin lites in the oil bizness whitch is the reesen so menny peeple rit 2 me 2 cum, on acount it would not be no meeting of the leedin lites in the oil bizness compleat unlessen i was their, yu no what i meen.

well i had not qite made up mi mine i wud go until sat. nite wen i went down town an seen walter fondren whitch werks for the humble co. an he sed he wantid me 2 go along an advise with him on the propersishun they hav up in whitch he is intrested in the standardizashum of rotary drillin equipment. he sed that mi wide experents with rotry drillin wud be of inkalculable benefits 2 the committy whitch has this hear proposhishun in charge, or werds 2 that effeck.

well cleo, yu bein a women and woman not havin mutch sents about oil feeld drillin, i gess yu do not understan what they meen about standardizashun of rotry drillin. at first i thort miself that it ment just what it sed, but i find out that standardizashun meens more things than 1 the same as instytoot meens more than 1, & in the way they are taklin about it does not meen makin all rotry outfits be standard rigs. i gess not. if it did i wud be agin it, as i no frum experents that the onliest way 2 drill in the salt dume cuntry is with a rotry. but what they is after is 2 make all the stuff so it will werk 2gether, whitch is a pritty good skeam, eh cleo. i dont no mutch about it miself, but if that comity wants 2 no ennything about rotry drillin i am the veryiest huckleberry whitch can tell them all about it to a mile deep whitch is as far as i hav bin, an if they want 2 go deeper than that they can, but i can find oil without goin that deep bekaus i no mi vegitbles.

well, ennyhow i am on mi way 2 the meetin, an i am all dressed up in sum neerly new close i bort at a army goods store sat. nite & also gotten me a shave & a hair cut & a bath gettin reddy, an even put on clean unawares & socks so i can go 2 bed on the trane with the rest of the fellers frum huston whitch is goin up on the same trane whitch i am goin on, an it will be a live party & old huston will shine wen we roll in2 st luis.

i hav got a plenty of munny 2 git up their on an i am goin 2 depend on a gaim what they call culvert or sumthin like that 2 git the munny 2 ride back on. i hav invest sum good munny in lernin this gaim on the trane—wunst with underwood nazro about 15$ an anuther time 10$ whitch i giv serle & benner. yu see nazro does not no about me pracktsin on them last 2 & he will be keen 2 git in the game with me & i will giv him the surpisest surprised in his life. & if i cant make it with the cards i still hav mi dise & can git me up a reel gaim.

anuther reesen whitch it is importent for me 2 be at this meetin is that sum guy has bin givin out sum more prophetsyin about the supply of oil will soon play out & they need me up their 2 tell all the big boys better. if it was not for me thay mite git 2 talkin about how there bizness will soon be all gone 2 smash on akount of not havin no more oil for the refinries & git so discouraged that they will go back home & bern up the plants 2 git there insurents in plase of letting there refinries rust down like this hear forecast about all the oil bein gone will meen for them 2 do. i am the 1 man in the u. s. 2day whitch can restore the confidents, an wen i get threw tellin them how mutch oil it is, i bet walter teegle & harry sinklare will go rite home & tell there hired men 2 git bussy & bild sum more refinries & buy sum tanks 2 put oil in.

hunny i will be back bfore crismus unlessen i hav 2 go on 2 washington 2 sea pres. coolidge. he written a message 2 congress the other day & did not say nuthin about oil in it, an i expeckt the reesen is that he did not no nuthin about it, an so i am especktin a telegram from him 2 cum up & help him rite a speshul massage on it. he is too smuth a polytishun 2 overlook oil—he has just bin lookin around for the rite man 2 advice him on the ? & he has herd about me bi now, or he will bi the time the newspapers git aholt of the news about me bein up 2 st luis tellin them what is what.

cleo hunny yu neednt not be surprised if you see mi pitcher in the paper before i git back on acount i hav not maid up mi mine if i will run for pres. of the instytoot or no, but i hav giv the huston newspapers all of them mi pitcher in case i do. an if i run yu no what it will meen ,eh cleo. they r lookin for the best man they can git for the job, so it will only meen me desidin if i can giv up enuff of mi valler-able time 2 tend 2 it for them.

well mi own true 1, bi the time yu git this letter i will be a long ways off frum yu, an i am gittin mitty tired of lettin mi bizness afairs interfere with me cumin down 2 sea yu, so the next time i am not goin 2 let them take me off like this. i no i owe a dooty 2 the good of the oil bizness, but they r interferin with mi dooty 2 yu an unlessen they can arange for me 2 sea yu sumtimes i am goin 2 tell the hole buntch 2 go to. hunny i neerly sed a sware werd, but i remembered in time. yu r mi sweety an yu r watin for yore big boy, aint yu cleo? say yes & make me the hapiest man in the werld.

yore lovin paul.

FOR SALE

One Jarecki Pipe Machine. Capacity 2½ to 12½" inclusive. In good condition and equipped with dies for all sizes of pipe.

50,000 feet 4-inch Used Line Pipe
20,000 feet 6-inch Used Line Pipe
25,000 feet 8-inch Used Line Pipe

For immediate shipment from our Texas yards.

KEYSTONE PIPE & SUPPLY COMPANY
314-315 W. T. Waggoner Bldg., Phone Lamar 3640, FORT WORTH, TEXAS
Branch Stores: Wichita Falls, Graham, Breckenridge

PETROLEUM SUPPLY COMPANY
DISTRIBUTORS
South Chester Oil Country Tubular Goods
Darling Gate Valves
"OCB" Tool Joints Roark Standing Valves
Petroleum Plunger Pumps McKemie Working Barrels
"GULFCO" PRODUCTS
STOCKS: HOUSTON MEXIA SHREVEPORT
EL DORADO NORPHLET SMACKOVER

THE LAYNE

PATENT
Lead Cone and Canvas Ratchet
PACKER
for the Oil Fields

has been proving its supremacy for more than 15 years by giving

continuous
satisfactory
service

—1—
Left hand buttress threads, shallow cut, do not weaken pipe—prevents packer from uncollapsing.

—2—
The canvas consists of strong and durable duck, compressed to iron-like hardness, insuring a nearly perfect pack.

—3—
The lead insures a good joint on the pipe and increases packing capacity—lessens danger of bursting pipe.

Wire, phone or write US your Packer and Strainer Needs

THE LAYNE & BOWLER COMPANY
HOUSTON, TEXAS FACTORIES MEMPHIS, TENNESSEE

SQUEAKS from the BULL WHEEL

In the Toy Shop

Young Man (buying toys for his sister's kids): "What do those talking dolls cost?"

Sales girl: "These say 'mama' and are priced $5 to $15, according to size."

"What would it cost to get one that says 'papa'?"

"Well, that generally depends upon how much you have."

Who Pays?

Stranger: Farm products cost more than they used to.

The Farmer: Yes. When a farmer is supposed to know the botanical name of what he's raisin' an' the entomological name of the insect that eats it, an' the pharmaceutical name of the chemical that will kill it, somebody's got to pay.

What's Left?

The riddle fiend announced, "If I take two letters from 'money' 'one' will be left. Curious, isn't it?"

"Very," drawled the bored friend, "but I can tell you something more curious."

"What's that?"

"A postman I knew took money from two letters, and now his wife and family are left!"

A Funny Growth

"Have you heard what's happened to poor Bill?"

"No; what?"

"He's got a funny growth behind his nose."

"How did he get it?"

"Well, I don't know that, but he calls it his face."

A Kitchen Calamity

The fire died in the kitchen range and an investigation as to the cause of her death was started.

Did the stove poker?
Did the coat hanger?
Did the lawn mower?
Did the meat grinder?
Did the biscuit cutter?

Some one asked: Where has the coal bin?

Past and Present

A New York city official, as the story is going the rounds, was walking through City Hall Park with one of his commissioners. As they passed the statue of Nathan Hale, who stands with his hands behind his back, the commissioner said:

"Mr. Official, don't you think that statue of Nathan Hale is a beautiful piece of work?"

"Hale? Nathan Hale?" said the official in a puzzled tone. "Why, I thought that was a statue of Houdini!"—Argus.

Only Sound

A critic went by request to hear a certain politician make a speech.

"Well," said the politician, after he'd got through—"well, how was it?"

"Sound—very sound," said the critic.

"Yes," said the politician, and then, hungry for more, he beamed and added, "Sound—and what else?"

"Nothing else," said the critic. —Los Angeles Times.

Life Friends

Down in Limestone County, Alabama, two neighboring farmers got into a quarrel over a matter of an apparently trivial nature. One neighbor had the other arrested for stealing an auger. When the case came in court, the only witness was an aged darky. The prosecuting attorney was cross-examining him in a friendly way.

"Now Mose," said the learned man of the law, "I want you to tell the judge how long you have known that auger." "Well, yo, honor, Jedge, sar," answered the darky, "I's known that auger ever since it was a gimlet."

Judge: "I don't expect to see you here again, Henry.

Henry: Not see me here again, Judge? Why, you're not going to resign, are you?

A negro cut off one of his toes while cutting wood. He went to a doctor's office to have the wound dressed, and as the doctor looked at it he asked:

"Sam, did you cut it off clean that way at one blow?"

"Well, now, doctor," replied Sam, "do you think I'd take a second lick at it?"

Midnight

His white friends called him "Midnight" because of his black skin, and he didn't mind, but it was different when the niggers tried it. One day a dusky citizen met him, and said, "Hello, Midnight," and he indignantly replied—"Looks lak youse about a quartah to twelve, yousef."—Gulf Coast Lumberman.

Her Proof

Mrs. Newbride (telephoning) I'm afraid you sent me duck eggs this morning instead of hens' eggs.

Grocer—Duck eggs, ma'am. I don't keep any duck eggs.

Mrs. Newbribe—But I tested them. I dropped them in water and they floated.—Boston Transcript.

Contagious

With all a six year old's familiarity with measles, chickenpox and colds, Bobbie emerged from a siege of whooping cough much the worse for wear. The first item of interesting news he received was that his aunt was at the hospital and that there was a new baby he would be allowed to go to see soon.

"And see Aunt Mary, too?" he asked incredulously.

"Of course. Why not?"

"But, mother," fearfully, "will I catch it?"—American Legion Weekly.

Would Make it Clearer, Perhaps

Eva: Professor Wise recommended to me Einstein's "The Theory of Relativity" as being a very interesting book.

Bernice: And have you read it?

Eva: No; I'm waiting for it to appear in the movies first.

Say it in Algebra

Mrs. Gottrichquigg (to visiter)—Yass, our little son, Jamie, is learning French and algebra, you know. Jamie, tell the lady how to say "good morning" in algebra.—Chicago News.

Qualified

"I want some intelligent men as hospital orderlies," announced Lt. Worley. "Any pharmacists in the company?"

A flaxen-haired individual shuffled foward.

"Ye gods?" said the lieutenant, "are you a pharmacist?"

"Sure ay bane pharmersis," was the indignant reply. "Vy, ay bane on pharm all mae life." —Marion Line.

"Never hear about malaria out this way any more."

"No," answered Uncle Bill Bottletop. "Malaria gets terrible unpopular when there is nothing to cure it with except quinine."

Hokus: "Who wrote 'Ten Nights in a Bar Room'?"

Pokus: "Shakespeare."

"Aren't you thinking of the 'Twelfth Night'?"

"What difference did a couple of nights more or less make in those days?"

Mary Flapper: These photographs of myself and my husband are not at all satisfactory and I refuse to accept them. Why, my husband looks like a baboon."

Photographer: "Well that's no fault of mine, madam. You should have thought of that before you took him."

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS

Indisputable Evidence—No. 2

A. F. KIMMELL — R. L. DILLARD

KIMMELL & DILLARD
DRILLING CONTRACTORS AND PRODUCERS
408 RUB WAGGONER BUILDING

WICHITA FALLS, TEXAS July 9, 1923

Messrs. Black - Sivalls & Bryson,
1404 F & M. Bank Building,
Fort Worth, Texas.
Dear Sirs:-

Complying with your request for a report on the performance of the eight, two hundred fifty barrel Vapor Proof Steel Tanks, purchased from you during the last few months, beg to say that they have been and are now giving entire satisfaction.

We know from our experience with these tanks that they not only hold the high gravity of the oil we are producing, but also that they make possible a greater volume, for the reason that the lighter portions, which rise from the oil, due to agitation or heat on the lines or tanks, is retained, and cannot pass away as is the case with an open tank, or with one that will not hold sufficient pressure to prevent escape.

We would like to speak a word on behalf of Mr. Miller, your foreman at Electra. In every instance, after a tank was set and filled, Mr. Miller has visited that tank to see that it was right, and even now, makes occasional inspection trips to each battery; he says "we must be satisfied."

Thanking you for your inquiry, we are,

Very truly yours,

KIMMELL & DILLARD,

By N. F. Kimmell

Holding Up High Gravity and Volume

You, too, can have that same feeling of satisfaction in the ownership of Perfection tanks as expressed by A. F. Kimmell.

Simply get in touch with one of our nearest representatives, who, like Mr. Miller, our foreman at Electra, is more than willing to keep customers and prospective customers satisfied.

Once installed your battery of Perfection tanks will begin paying for themselves.

And that's what will satisfy you most!

Black Sivalls & Bryson
INC.

BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

Say you saw it in The Oil Weekly

GUIDE FOR PURCHASERS

Air Compressors—
Southern Engine & Pump Co.

Air Lift Pumping Equipment—
Sullivan Machinery Co.

Attorneys—
Hirsch & Hannay
Vinson, Elkins & Wood

Balls and Seats—
The Chas. N. Hough Mfg. Co.

Band Wheels—
Lee C. Moore & Co., Inc.

Banks—
Exchange Banks of Tulsa
Commercial National Bank

Belting—
Bridgeport Machinery Co.
Continental Supply Co.
D. F. Connolly Agency
Frick-Reid Supply Co.
Norris Bros.
Oil Well Supply Co.
Republic Supply Co.

Boilers—
Bridgeport Machine Co.
The Brownell Co.
D. F. Connolly Agency
Continental Supply Co.
Frick-Reid Supply Co.
International Supply Co.
The National Supply Cos.
Oil Well Supply Co.
Republic Supply Company
Titusville Iron Works Co.
United Iron Works, Inc.
See Oil Field Supplies and Tanks

Burners—
Gaso Pump & Burner Mfg. Co.
Norris Bros.

Bull Wheels—
International Derrick & Equipment Co.
Lee C. Moore & Co., Inc.
Tulsa Rig Reel & Mfg. Co.

Calf Wheels—
Lee C. Moore & Co., Inc.

Casing—
David L. Schofield
Republic Supply Company
Superior Tube Co.

Casing Shoes—
Baker Casing Shoe Co.
Bridgeport Machine Co.
Continental Supply Co.
Gulf Coast Machine & Supply Co.
The National Supply Cos.
Pelican Well Tool & Supply Co.
Republic Supply Company

Cement Hardener—
The Sullivan Co.

Compressors—
Butler Mfg. Co.
F. W. Heitmann Co.
Hope Engineering Co.
Sullivan Machinery Co.
United Iron Works, Inc.

Cordage—
D. F. Connolly Agency
Continental Supply Co.
The National Supply Cos.
Republic Supply Company

Crown Blocks—
American Well & Pros. Co.
Boykin Machinery & Sup. Co.
Gulf Coast Machine & Supply Co.
International Derrick & Equipment Co.
Lufkin Foundry & Machine Co.
Oil City Iron Works, Inc.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Superior Tube Co.

Couplings—
Harrisburg Pipe & Pipe Bending Co.
Superior Tube Co.

Dehydrating Processes—
W. S. Barnickel & Co.
Petroleum Rectifying Co.

Derricks and Rigs—
International Derrick & Equipment Co.
Lee C. Moore & Co.
Parkersburg Rig & Reel Co.
Peden Iron & Steel Co.
Tulsa Rig Reel & Mfg. Co.
Superior Tube Co.

Diamond Core Drills—
Sullivan Machinery Co.

Disc Bits—
Rotary Disc Bit Co.

Ditchers—
Buckeye Traction Ditcher Co.

Draw Works—
American Well & Pros. Co.
Lufkin Foundry & Machine Co.

Drilling Cables—
Bridgeport Machine Co.
D. F. Connolly Agency
Continental Supply Co.
Frick-Reid Supply Co.
F. W. Heitmann Co.
The National Supply Cos.
Peden Iron & Steel Co.
Republic Supply Company
Williamsport Wire Rope Distributing Co.

Drilling Machines—
Bridgeport Machine Co.
Keystone Driller Co.
Oil City Iron Works, Inc.
Parkersburg Rig & Reel Co.

Drill Pipe—
Continental Supply Co.
Republic Supply Company
Reading Iron Co.
Standard Seamless Tube Co.
Superior Tube Co.

Drilling Equipment—
American Well & Pros. Co.
Bridgeport Machine Co.
Continental Supply Co.
Oil City Iron Works
Republic Supply Company

Drive Pipe—
Republic Supply Company
Reading Iron Co.
Superior Tube Co.

Electrical Equipment—
Southwest Gen. Elec. Co.
Westinghouse Elec. & Mfg. Co.

Elevators—
B. & C. Machine & Fndy. Co.
Bridgeport Machine Co.
Dunn Mfg. Co.
Gulf Coast Machine & Supply Co.
Norris Bros.
Wilson & Willard Mfg. Co.

Engines, Diesel—
Western Machinery Co.

Engines, Gas—
The Braden Co.
Western Machinery Co.

Engines, Oil—
Continental Supply Co.
Western Machinery Co.

Engines, Pumping—
Ajax Iron Works
American Well & Pros. Co.
Bessemer Gas Engine Co.
Bridgeport Machine Co.
The Brownell Co.
De La Vergne Machine Co.
Franklin Valveless Engine Co.
Hope Engineering Co.
Lucey Mfg. Corp.
Lufkin Foundry & Machine Co.
The National Supply Cos.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Peden Iron & Steel Co.
Republic Supply Company
Southern Engine & Pump Co.
Titusville Iron Works

Engineers—
Samuel J. Caudill
F. W. Freeborn Eng. Co.
Geo. C. Matson
Lee C. Moore & Co.

Fire Protection—
Foamite-Childs Corporation

Fish Tail Bits—
American Well & Pros. Co.
Federal Supply Co.
Gulf Coast Machine & Sup. Co.
Oil City Iron Works, Inc.
Pelican Well Tool & Sup. Co.

Floor Circle Brace—
Dunn Mfg. Co.

Fuel Oil—
Gulf Ref. Co.
Sinclair Ref. Co.

Gas Traps—
Trumble Gas Trap Co.

Gasoline Extraction Compressors—
Bessemer Gas Engine Co.
Gardner Governor Co.
Sullivan Machinery Co.

Gasoline and Oil Storage Tanks—
Butler Mfg. Co.
Kansas City Struct. Steel Co.
Parkersburg Rig & Reel Co.

Gauges—
The Foxboro Co., Inc.

Gauge Boards—
The Foxboro Co., Inc.

Genuine Wrought Iron Casing—
Reading Iron Co.
Superior Tube Co.

Geologists—
Samuel J. Caudill
Alexander Deussen
Edwin B. Hopkins
Geo. C. Matson
Herald Bros.

Grips and Clamps—
Norris Bros.

Heat Exchangers—
Brown Welding & Machine Co.

Hose—
D. F. Connolly Agency

Houses—
Crain Ready-Cut House Co.

Laboratory Equipment—
Fort Worth Laboratories

Lease Equipment—
The Braden Co.

Lighting Systems—
Bridgeport Machine Co.
Westinghouse Elec. & Mfg. Co.

Line Pipe—
Continental Supply Co.
Republic Supply Company
Reading Iron Co.
Superior Tube Co.

Manufacturers—
Robinson Packer Co.

Meters—
The Foxboro Co., Inc.

Motors—
Southwest Gen. Elec. Co.

Oil Field Supplies—
American Well & Pros. Co.
B. & C. Machine & Fndy. Co.
The Braden Co.
Bridgeport Machine Co.
Butler Mfg. Co.
D. F. Connolly Agency
Continental Supply Co.
Frick-Reid Supply Co.
Gulf Coast Mach. & Sup. Co.
International Supply Co.
Kansas City Struct. Steel Co.
Lee C. Moore & Co.
The National Supply Cos.
Norris Bros.
Oil City Iron Works, Inc.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Peden Iron & Steel Co.
Pelican Well Tool & Sup. Co.
Republic Supply Company
Robinson Packer Co.
H. M. Spence
Superior Tube Co.
Tulsa Rig Reel & Mfg. Co.
United Iron Works, Inc.

Oilwell Casing—
Republic Supply Company
Superior Tube Co.
Texas Pipe & Supply Co.

Packers—
The Guiberson Corp.
Layne & Bowler
Robinson Packer Co
Pelican Well Tool & Supply Co.

Packing—
D. F. Connolly Agency
The National Supply Cos.
Peden Iron & Steel Co.
Pelican Well Tool & Sup. Co.
Republic Supply Company

Paints—
Peden Iron & Steel Co.

Patents—
Hardway & Cathey
Jesse R. Stone

Pipe Grips—
Norris Bros.

Pipe—
Continental Supply Co.
Frick-Reid Supply Co.
F. W. Heitmann Co.
Harrisburg Pipe & Pipe Bending Co.
International Supply Co.
The National Supply Cos.
Oil Well Supply Co.
Peden Iron & Steel Co.
Reading Iron Co.
Republic Supply Company
David L. Schofield
Superior Tube Co.
Standard Seamless Tube Co.
Williamsport Wire Rope Co.

Pipe Screwing Machines—
Buckeye Traction Ditcher Co.

Pipe Wrenches—
Continental Supply Co.
Dunn Mfg. Co.
The Guiberson Corp.
Republic Supply Company

Portable Buildings—
Butler Mfg. Co.
International Derrick & Equipment Co.

Portable Compressors—
Sullivan Machinery Co.

Portable Drillings Rigs—
Bridgeport Machinery Co.
Lee C. Moore & Co.
Oil Well Service Co.
Parkersburg Rig & Reel Co.
The National Supply Cos.

Pulleys—
International Derrick & Equipment Co.
Lee C. Moore & Co.

Pulling Machines—
Clark Machine Co.
Myrick Machine Co.
Safety Pulling Machine Co.

Pumps—
Axelson Machine Co.
American Well & Pros. Co.
Continental Supply Co.
D. & B. Pump & Sup. Co.
Gardner Governor Co.
Frick-Reid Supply Co.
Gaso Pump & Burner Mfg. Co.
Norris Bros.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Pelican Well Tool & Supply Co.
Republic Supply Company
Southern Engine & Pump Co.
Texas Oil Pump Co.
United Iron Works, Inc.

Pumping Powers—
The Braden Co.
H. M. Spence

Refined Products—
Gulf Refining Company
Humble Oil & Refining Co.
Sinclair Refining Co.
Sunshine State Oil & Ref. Co.
The Texas Company

Recorders—
Fort Worth Laboratories
The Foxboro Co., Inc.

Refinery Equipment—
Butler Mfg. Co.
Continental Supply Co.
Frick-Reid Supply Co.
Gardner Governor Co.

Books On Petroleum

The knowledge gained through years of work and study by some of the most capable men in the oil industry is set down in the books listed herein. Order some of these books and profit by the experience of others.

(The following is reprinted from our complete catalog of OIL BOOKS, which will be sent free on request. Watch this space from week to week for description of practically every book available on Petroleum.)

Petroleum Resources of the World

By Valentin R. Garfias. A summarized review of the producing and prospective oil fields of the world, including the financial and commercial position of the respective countries, and the salient features of the geology, production, transportation and refining in the oil fields. The material for each country, whether productive or prospective, has been divided into three main parts: (a) The Country itself; main facts regarding same and its present commercial and financial status. (b) Petroleum Resources; whether productive or prospective. (c) Petroleum Legislation. 243 pages, 5x7¼. Fully illustrated with maps, showing producing fields and petroleum indications in the various countries of the world. "Altholeather" binding.

Price, postpaid $3.00

Field Geology

By Frederic H. Lahee, Chief Geologist of the Sun Company, formerly Assistant Professor of Geology, Massachusetts Institute of Technology. New Second Edition. Published February, 1923. A Textbook and a manual for use both in the field and in the laboratory. It aims to be of service not only to students of geology, but also to mining engineers, and others whose interests bring them in touch with geologic problems. For those interested in petroleum geology, particular attention is called to the explanation of well logs and their correlation and application in the preparation of subsurface geologic maps. The book covers: (1) The recognition and interpretation of geologic structures and topographic forms as they are observed; (2) Methods of geologic surveying; (3) Nature, construction and uses of maps, sections, block diagrams, etc.; (4) Solution of certain geologic computations; (5) The preparation of geologic reports. Revised and enlarged. 651 pages, pocket size, flexible, 456 illustrations.

Price, postpaid, net $4.00

Prospecting for Oil and Gas

By L. S. Panyity, Oil and Gas Geologist, The Ohio Fuel Supply Company. In this book the author describes the various tools and methods of the present-day scientific oil and gas prospector. It is intended for the practical oil men and the general public. Contents: Composition and Properties of Oil and Gas. Origin of Oil and Gas. General Geology. Accumulations of Oil and Gas. Structure. The Effect of Structures upon Accumulations. Surveying Instruments and Methods. Maps. Geological Field Work. Scouting. Methods of Locating Wells. Drilling Method. "Bringing-in" Wells. Completion of Wells. Gauging Oil and Gas Wells. Increasing Production. The Producer and Landowner. 249 pages, 6 by 9 inches, 28 tables.

Price, postpaid $3.25

Handbook of Casinghead Gas

By Henry P. Westcott. Everything concerning casinghead gas and gasoline from the oil sand to the automobile. 275 pages, 55 illustrations, 100 tables.

Price, postpaid, Cloth, $3.75. Leather $4.50

Send us your order NOW

THE GULF PUBLISHING CO.

P. O. Box 1307, Houston, Texas

GUIDE FOR PURCHASERS—Continued

Refinery Equipment (Continued)—
Kansas City Struct. Steel Co.
Republic Supply Company
Titusville Iron Works
United Iron Works Inc.
Wyatt Metal & Boiler Works

Rig Irons—
Frick-Reid Supply Co.
International Supply Co.
Lee C. Moore & Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Republic Supply Company

Rotary Rock Bits—
Hughes Tool Co.

Rotary Fish Tail Bits—
Continental Supply Co.
Federal Supply Co.
Pelican Well Tool & Supply Co.
Republic Supply Company

Rubber Fillers—
National Rubber Filler Co.

Sectional Steel Buildings—
The Braden Co.

Separators—
Butler Mfg. Co.
Gardner Governor Co.
Trumble Gas Trap Co.

Strainers—
Layne & Bowler Co.
Pelican Well Tool & Supply Co.

Structural Steel—
Butler Mfg. Co.
Kansas City Struct. Steel Co.
Pennsylvania Tank Car Co.
United Iron Works, Inc.

Steel Derricks—
International Derrick & Equipment Co.
Lee C. Moore & Co., Inc.
Superior Tube Co.

Steel Crown Blocks—
Gulf Coast Mach. & Supply Co.
Lee C. Moore & Co.
Parkersburg Rig & Reel Co.
Superior Tube Co.

Steel Manufacturers—
Colonial Steel Co.

Steel Storage Tanks—
Butler Mfg. Co.

Sucker Rod Lines—
D. F. Connolly Agency
Continental Supply Co.

Sucker Rods—
Axelson Machine Co.
D. & B. Pump & Sup. Co.
Dunn Mfg. Co.
Norris Bros.
S. M. Jones Co.
The National Supply Cos.
Oil Well Supply Co.
Republic Supply Company

Sucker Rod Sockets—
Brown Welding & Machine Co.

Tank Cars—
Pennsylvania Tank Car Co.

Tanks—
Butler Mfg. Co.
Black, Sivalls & Bryson
The Brownell Co.
Gantz Tank Co.
Kansas City Struct. Steel Co.
Maloney Tank Co.
Parkersburg Rig & Reel Co.
United Iron Works Co.
Wyatt Metal & Boiler Works

Tret-O-Lite—
W. S. Barnickel & Co.

Thermometers—
Fort Worth Laboratories
The Foxboro Co., Inc.

Tongs—
Bridgeport Machine Co.
Dunn Mfg. Co.
Guiberson Corp.
Norris Bros.
Pelican Well Tool & Supply Co.
Wilson & Willard Mfg. Co.

Tool Joints—
American Well & Pros. Co.
Boykin Machinery & Sup. Co.
Bridgeport Machine Co.
Continental Supply Co.
Federal Supply Co.
Hughes Tool Co.

Tool Joints—(Cont.)
Pelican Well Tool & Sup. Co.
Republic Supply Co.

Tools (Fishing and Drilling)—
Bridgeport Machine Co.
Brown Welding & Machine Co.
Frick-Reid Supply Co.
Hughes Tool Co.
International Supply Co.
Oil Well Supply Co.
Peden Iron & Steel Co.
Pelican Well Tool & Supply Co.
Republic Supply Company
Sullivan Machinery Co.

Tractors—
Holt Mfg. Co.

Tractor Winch—
Tulsa Rig Reel & Mfg. Co.

Traveling Blocks—
American Well & Pros. Co.
Boykin Machinery & Sup. Co.
Gulf Coast Machine & Supply Co.
Lufkin Foundry & Machine Co.
Oil City Iron Works, Inc.

Tubing Catcher—
Dunn Mfg. Co.
Guiberson Corp.

Tubing Lines—
D. F. Connolly Agency

Tubing—
Republic Supply Company
Reading Iron Co.
Standard Seamless Tube Co.
Superior Tube Co.

Underreamers—
American Well & Pros. Co.
Bridgeport Machine Co.
Wilson & Willard Mfg. Co.

Valves—
Darling Valve & Mfg. Co.
The Charles N. Hough Mfg. Co.
Texas Oil Pump Co.
Ludlow Valve Mfg. Co.
Pratt & Cady
Reading Steel Casting Co.
Reading Valve & Fittings Co.
Westcott Valve Mfg. Co.

Vacuum Pumps—
Gardner Governor Co.
Sullivan Machinery Co.

Valves and Fittings—
Continental Supply Co.
Darling Valve & Mfg. Co.
D & B Pump & Sup. Co.
Frick-Reid Supply Co.
F. W. Heitmann Co.
Ludlow Valve Mfg. Co.
Lufkin Foundry & Machine Co.
The National Supply Cos.
Norris Bros.
Peden Iron & Steel Co.
Pratt & Cady
Republic Supply Company
Reading Steel Casting Co.
Reading Valve & Fittings Co.
United Iron Works

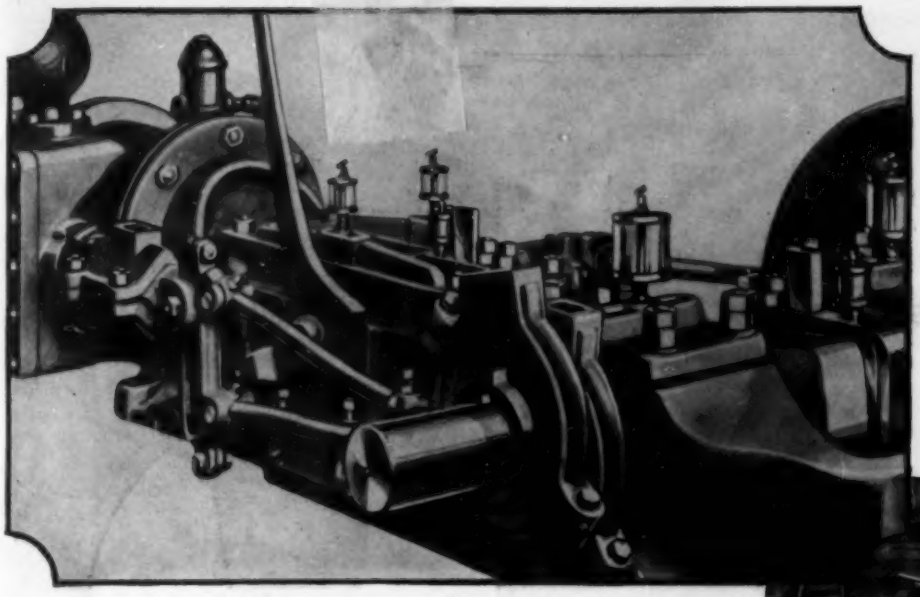
Walking Beams—
International Derrick & Equipment Co.
Lee C. Moore & Co., Inc.

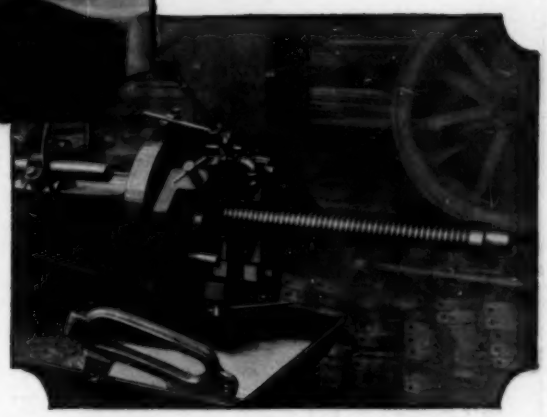
Welding and Cutting Equipment—
Imperial Brass Mfg. Co.

Working Barrels—
Axelson Machine Co.
Continental Supply Co.
D & B Pump & Sup. Co.
Republic Supply Company
The Charles N. Hough Mfg. Co.
Texas Oil Pump Co.
McGregor Working Barrel Co.

Water Gauges—
F W. Heitmann Co.

Wire Rope—
Bridgeport Machine Co.
D. F. Connolly Agency
Continental Supply Co.
Houston Oil Field Material Co.
International Supply Co.
Republic Supply Company
The National Supply Cos.
Williamsport Wire Rope Distributing Co.





Reversing Made Easy

The substantial construction of the Ajax reversing mechanism together with the improved adjustment of the link makes reversing an Ajax Drilling Engine positive and easy.

The curved link on the Ajax Engine is accurately broached to fit the roller which is hardened and ground inside and out. The roller pin is also hardened and ground. The reversing lever is more conveniently placed —throws easier and is built stronger.

Ajax Engines are easier to handle and more responsive.

Distributed by
NATIONAL SUPPLY COMPANIES
in every oil field

Manufactured by
AJAX IRON WORKS
Corry, Pa.

3463

AJAX DRILLING ENGINES

This string of 3-inch tool joints shown in the picture with Foremen Hampton and Dyer and Driller Whitner, had already completed Doybins wells Nos. 1 and 2 for the Shell Company of California at Signal Hill. Both wells were completed at "more than a mile depth."

Hughes Tool Joints DO Last Longer, But Cost NO More

Sold by supply stores everywhere.

HUGHES TOOL CO.

HOUSTON, TEXAS, U.S.A. BRANCH-LOS ANGELES, CAL.